ORDER NO.PHAMOS0503019A1
E2

Service Manual

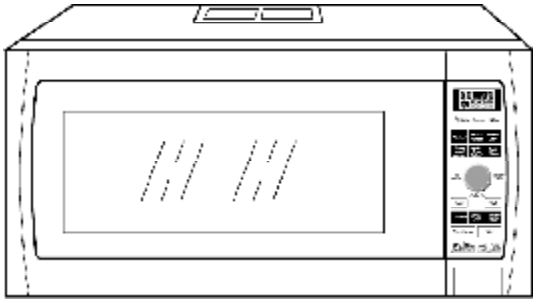
Microwave Oven

Simplified

NN-P295 NN-H275 / NN-S255 NN-S245 / NN-H264SFR / NN-H264BFR / NN-H264WFR / NN-S254SFR / NN-S254BFR / NN-S254WFR

APH(USA)
CPH(CANADA)

Please file and use this manual together with the service manual for Model NN-S262SF (Order No.SIMMC0203005C1)



SPECIFICATIONS

Specifications for APH:

Specifications: / Model:	P295SF/BF/WF	H264SFR/BFR/WFR	S254SFR/BFR/WFR	H275SF/BF/WF/QF	S255BF/WF
Power Source:	120V AC Single Phase, 60Hz				
Power Requirement:	1275W	1275W	1275W	1275W	1275W
Output:	1200W	1200W	1200W	1200W	1200W
Microwave Frequency:	*2450MHz				
Timer:	*99 min. 99 sec.				
Outside Dimensions: (W)x(D)x(H)	759mm(29 7/8") x 381mm(15") x 418mm(16 7/16")			759mm(29 7/8") x 390mm(15") x 418mm(16 7/16")	
Oven Cavity Dimensions: (W)x(D)x(H)	591mm(23 1/4") x 367mm(14 7/16") x 242mm(9 1/2")				
Weight:	25kg(55lbs.)	25kg(55lbs.)	24kg(53lbs.)	25kg(55lbs.)	24kg(53lbs.)
PbF	This product with PbF				
Specifications subject to change without notice.					

Specifications for CPH:

Specifications: / Model:	P295SF/BF/WF	S245BF/WF	H275SF/BF/WF/QF	S255BF/WF
Power Source:	120V AC Single Phase, 60Hz			
Power Requirement:	1275W	1275W	1275W	1275W
Output:	1100W	1100W	1100W	1100W
Microwave Frequency:	*2450MHz			
Timer:	*99 min. 99 sec.			
Outside Dimensions:(W)x(D)x(H)	759mm(29 7/8") x 381mm(15") x 418mm(16 7/16")		759mm(29 7/8") x 390mm(15") x 418mm(16 7/16")	
Oven Cavity Dimensions:(W)x(D)x(H)	591mm(23 1/4") x 367mm(14 7/16") x 242mm(9 1/2")			
Weight:	25kg(55lbs.)	24kg(53lbs.)	25kg(55lbs.)	24kg(53lbs.)
PbF	This product with PbF			
Specifications subject to change without notice.				

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⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

WARNING

1. This product should be serviced only by trained, qualified personnel.
2. Though this product has been manufactured in compliance with:
   "Federal Performance Standard 21 CFR Subchapter J"(D.H.H.S): U.S.A. models
   or "Radiation Emitting Devices Act"(Health and Welfare Canada): Canadian models
   it is very important all repairs should be made in accordance with procedures described in this manual to avoid being exposed to excessive microwave radiation.
3. Check for radiation leakage before and after every servicing according to the "procedure for measuring radiation leakage."
4. If the unit cannot be repaired on site, advise the customer not to use until unit is repaired.
5. Any serviceman who learns of any accident pertaining to microwave radiation leakage including the oven operating with open door should immediately notify the appropriate address listed below and Center for Devices and Radiological Health, DHHS.

IN U.S.A. (PASC)	Panasonic Services Company 50 Meadowland Parkway, Secaucus, New Jersey 07094 Attention: Technical Service Division. (201)348-7000	IN PUERTO RICO (PSC)	PSC San Gabriel Industrial Park 65th Infantry Ave. Km.9.5 Carolina, Puerto Rico 00985 (787)750-4300
		IN CANADA (PCI)	Panasonic Canada Inc. 5770 Ambler Drive, Mississauga, Ontario, L4W2T3 (905)624-5010

6. There are special components used in the microwave oven which are important for safety. These parts are marked with a ⚠ on the replacement parts list. It is essential that these critical parts be replaced only with the manufacture's specified parts to prevent microwave leakage, shock, fire, or other hazards. Do not modify the orginal design.

PRECAUTIONS TO BE OBSERVED BEFORE AND DURING SERVICING TO AVOID POSSIBLE EXPOSURE TO EXCESSIVE MICROWAVE ENERGY

(A) Do not operate or allow the oven to be operated with the door open.
(B) Make the following safety checks on all ovens to be serviced before activating the magnetron or other microwave source, and make repairs as necessary:
  (1) Interlock operation
  (2) Proper door closing
  (3) Seal and sealing surfaces (arcing, wear, and other damage)
  (4) Damage to or loosening of hinges and latches.
  (5) Evidence of dropping or abuse
(C) Before turning on microwave power for any service test or inspection within the microwave generating compartments, check the magnetron, waveguide or transmission line, and cavity for proper alignment, integrity and connections.
(D) Any defective or misadjusted components in the interlock, monitor, door seal, and microwave generation and transmission systems shall be repaired, replaced, or adjusted by procedures described in this manual before the oven is released to the owner.
(E) A microwave leakage check to verify compliance with the Federal Performance Standard should be performed on each oven prior to release to the owner.

CAUTION

About lead free solder (PbF)

Distinction of PbF PCB: PCBs (manufactured) using lead free solder will have a PbF stamp on the PCB.

Caution:
- Pb free solder has a higher melting point than standard solder; Typically the melting point is 50-70˚F(30 - 40˚C) higher. Please use a high temperature soldering iron. In case of the soldering iron with temperature control, please set it to 700± 20˚F (370 ± 10˚C).
- Pb free solder will tend to splash when heated too high (about 1100˚F/600˚C).

Panasonic®

DANGER OF HIGH VOLTAGE AND HIGH TEMPERATURE (HOT/LIVE) OF THE INVERTER POWER SUPPLY (U)

INVERTER WARNING

This Inverter board looks like a regular PCB. However, this PCB drives the magnetron tube with extremely high voltage and high current. NEW H.V.

IT HAS:

1. **Very high voltage and high current circuits.**
   It functions the same as the high voltage transformer and high voltage capacitor in ordinary microwave ovens.
2. **Aluminum heat sink that is energized with very high voltage and high heat energy.**
3. **Very high voltage which may remain in circuitry even when oven is off. High voltage charge may remain in the capacitors on the board.**

DO NOT:

* 1. **Do not touch circuitry because it has very hot (high voltage) circuitry. Even when replacing board, extreme care should be taken to avoid possible electric shock hazards. High voltage charge may remain in circuits.**

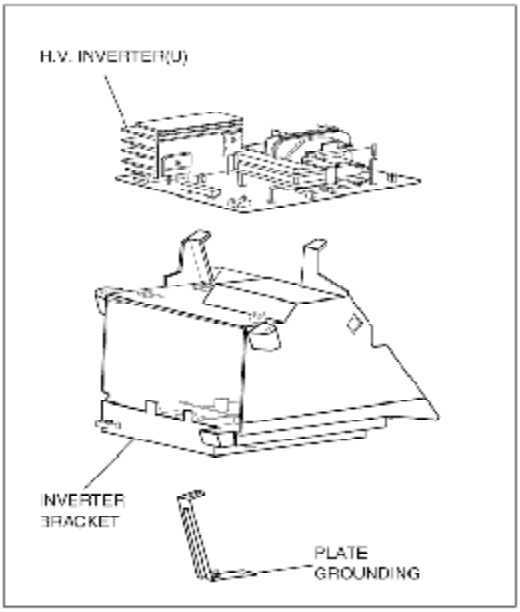
* 2. **Do not touch aluminum heat sink because it is energized with very high voltage and is also very hot in high heat energy.**

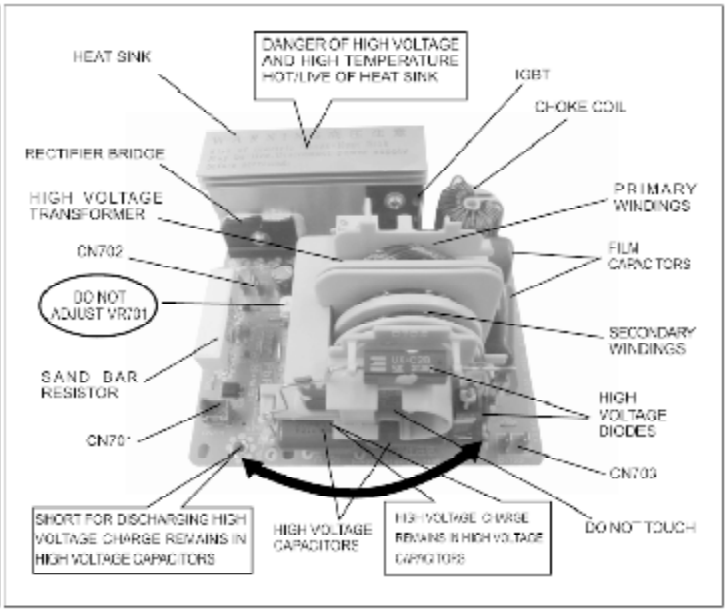
* 3. **Do not try to adjust or tamper with preset control on the Inverter board because it is very dangerous to adjust without proper test equipment.**

* 4. **Do not test oven while Inverter grounding plate or screws are loose. It is very dangerous to operate H.V. Inverter Circuit (U) with loose mounting screws or if improperly grounded.**

* 5. **For USA only:**
   Do not try to repair Inverter PCB because it is very dangerous to repair. Replace as a complete High Voltage Inverter Circuit unit and return fully re-packed in original shipping box and shipping materials.

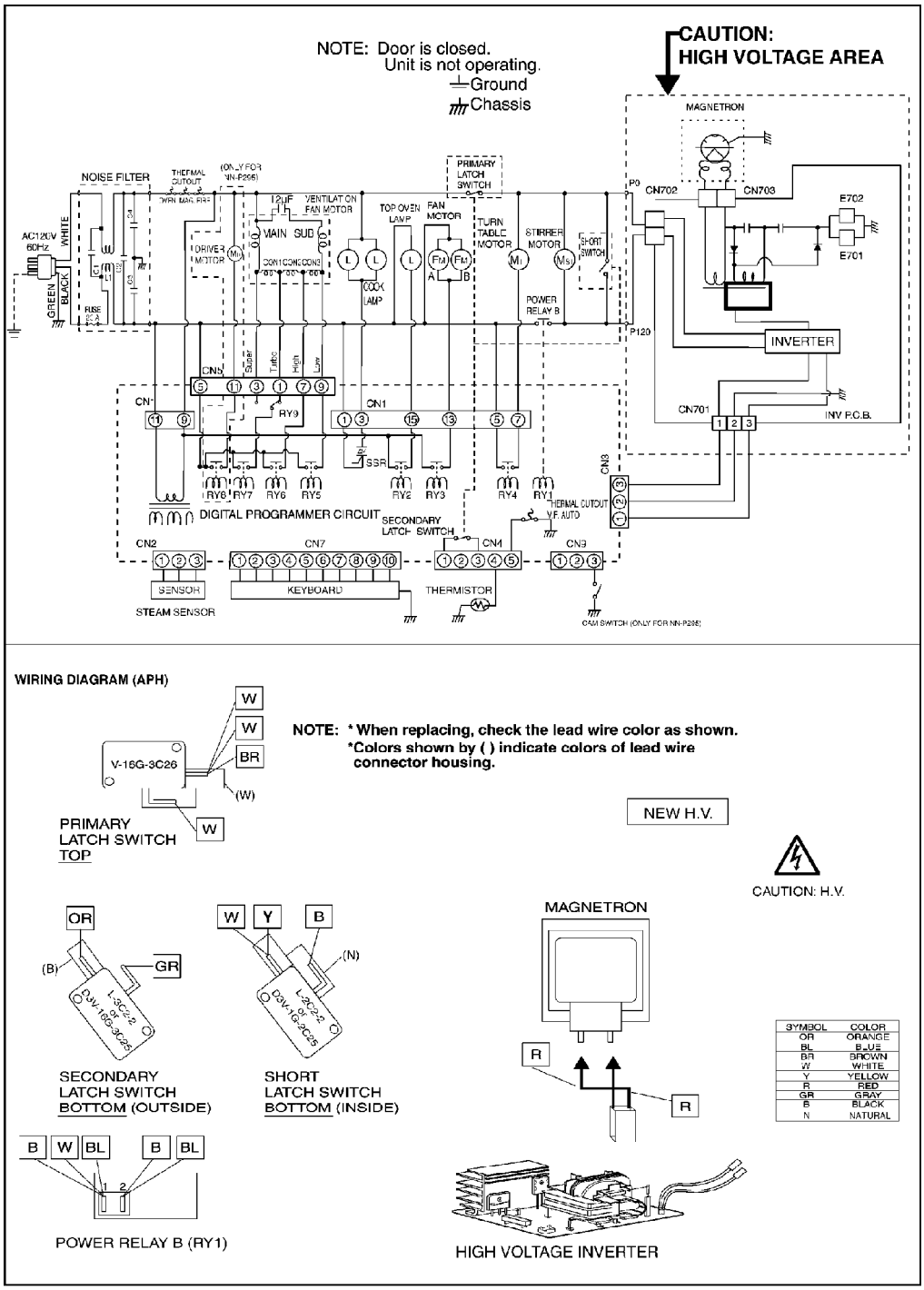
INVERTER POWER SUPPLY



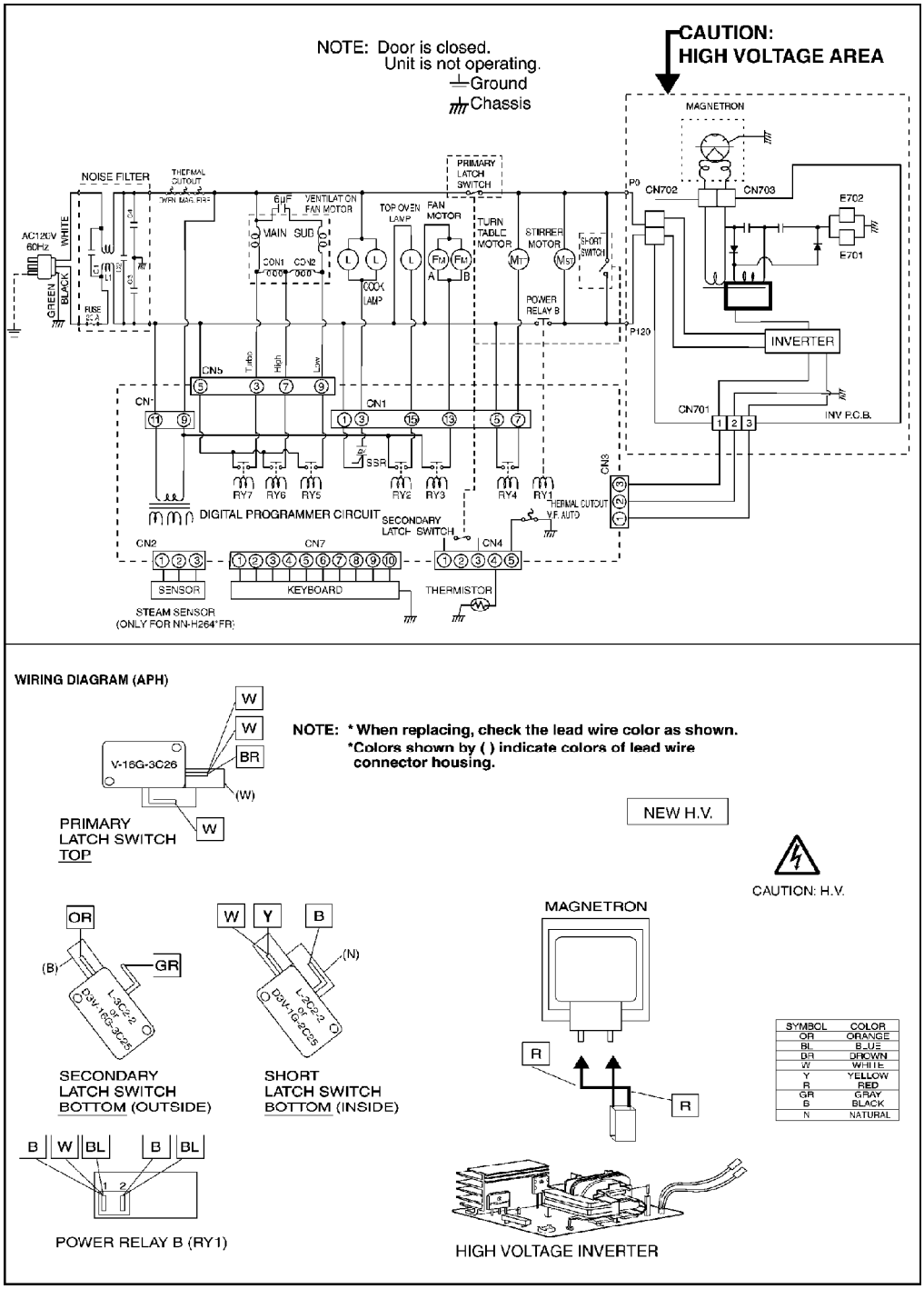


1. SCHEMATIC DIAGRAM

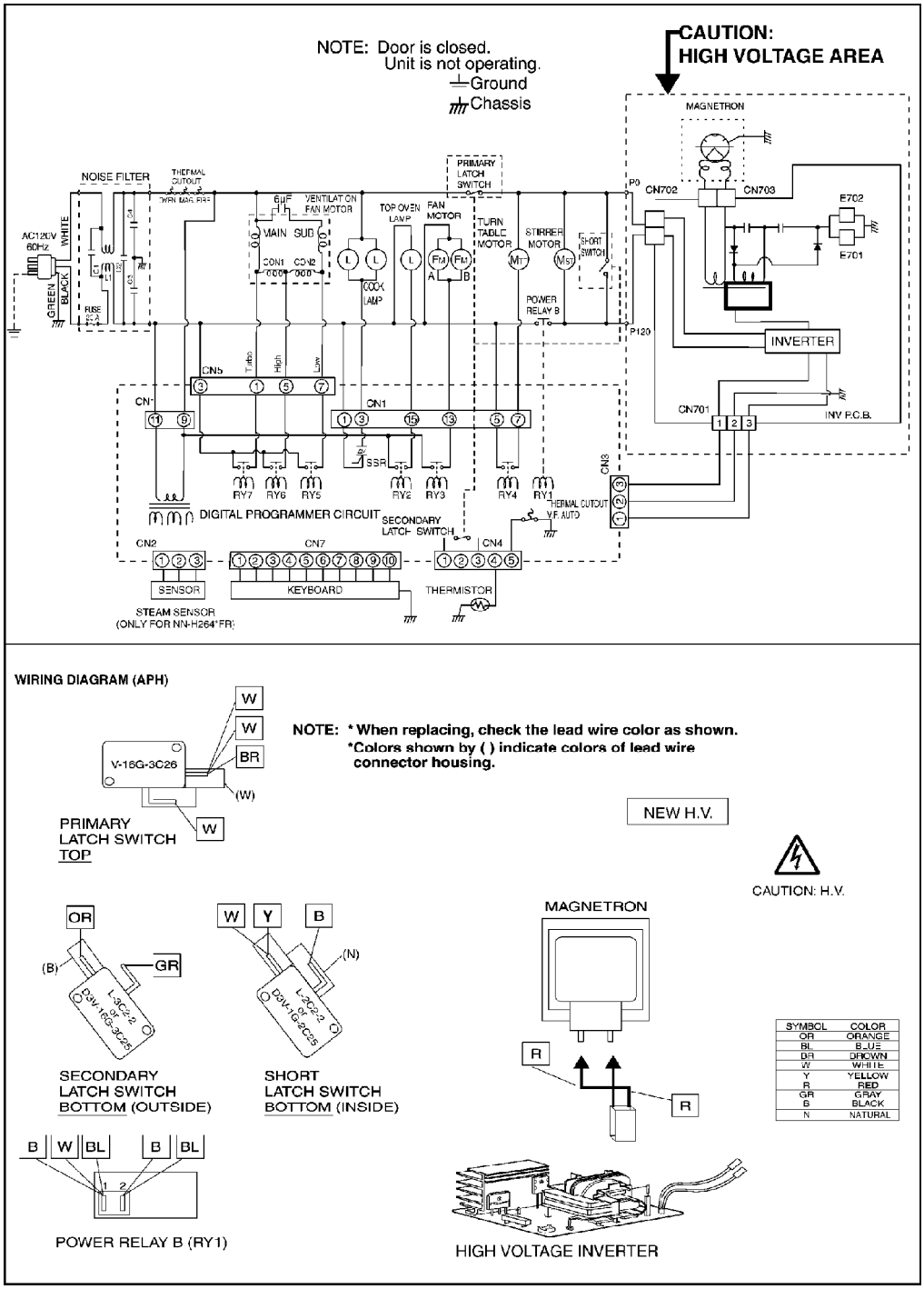
1.1. APH (NN-P295, H275)



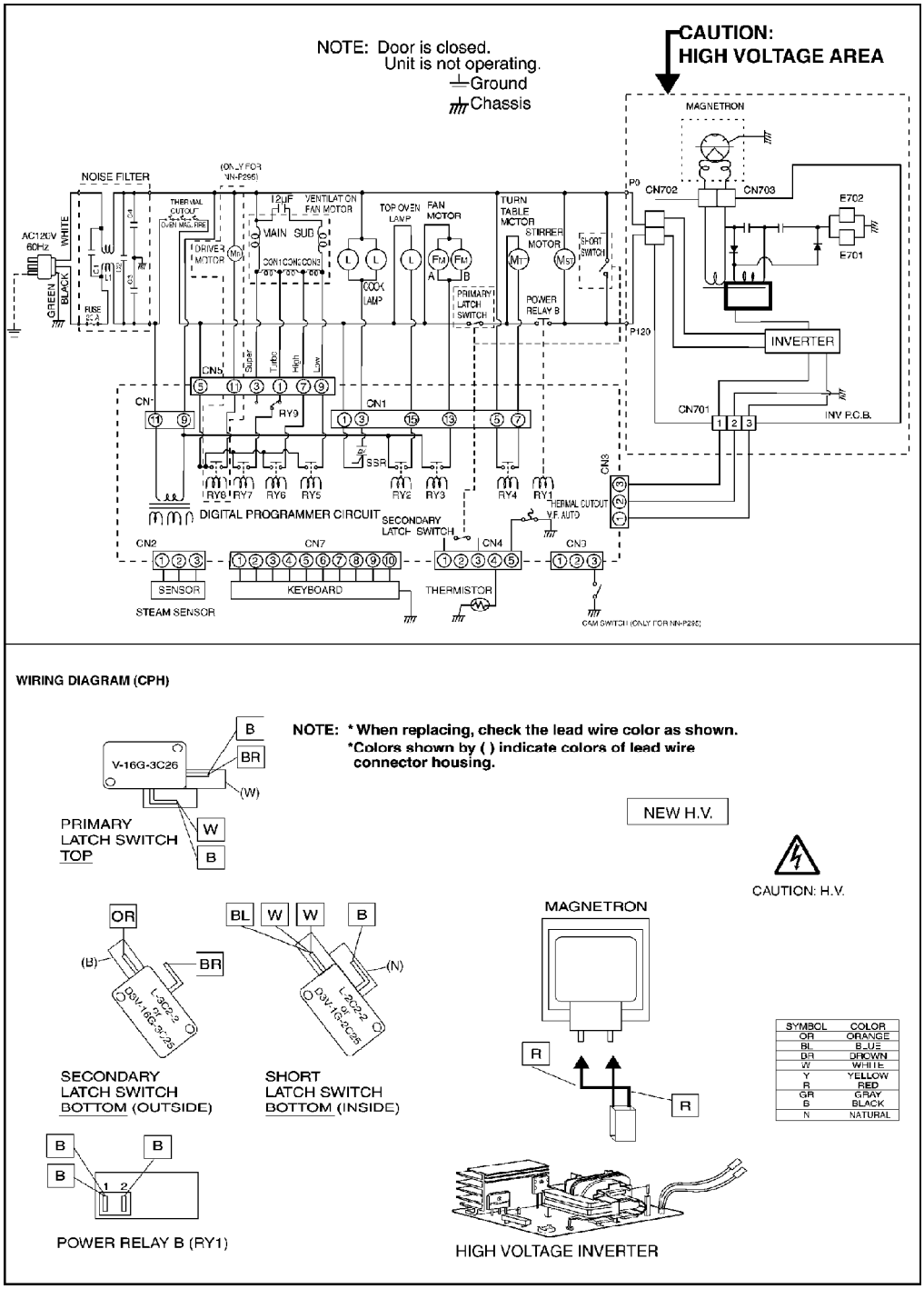
1.2. APH (NN-S255)



1.3. APH (NN-H264*FR, S254*FR)

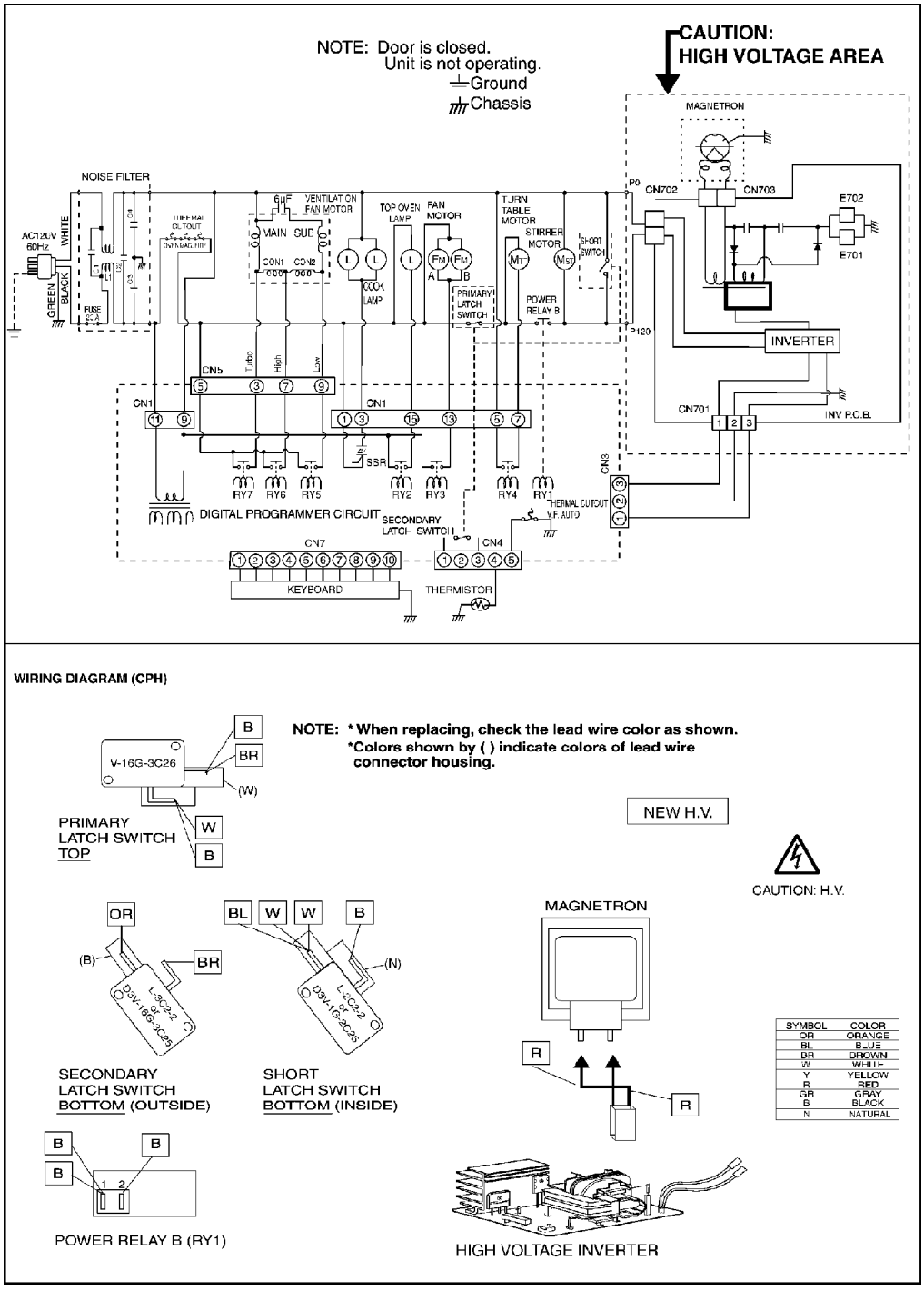


1.4. CPH (NN-P295, H275)



WIRING DIAGRAM (CPH)

1.5. CPH (NN-S255, S245)



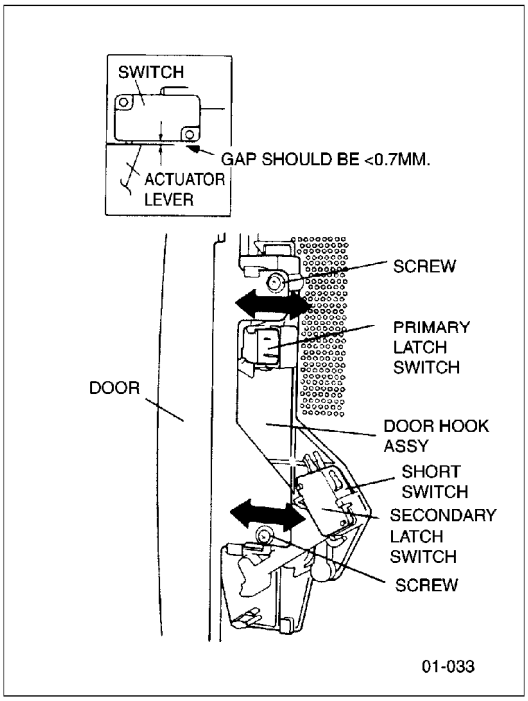
2. MEASUREMENTS AND ADJUSTMENTS

WARNING

* For continued protection against radiation hazard, replace only with identical replacement parts (For touch models Part No. J61424T00AP, Type No. V-15G-3C25 for Primary latch switch; Part No. J61414T00AP, Type No. D3V-16G-3C25 for Secondary latch switch and Part No. J61784T00AP, Type No. D3V-1G-2C25 for short switch.)
* When the 20 Amp. fuse is blown due to the operation of the short switch, you must replace power relay B (Part No. AEGG5G1A18, Type No. G5G-1A12VDC), Primary latch switch and the short switch. Then follow the installation procedures below.
* Interlock switch replacement In replacing faulty switches, be sure mounting tabs are not bent, broken or otherwise deficient in their ability to hold the switches.
* Refer to schematic diagram to ensure proper connection.

2.1. Adjustment of primary latch switch, secondary latch switch and short switch.

1. **Mount the Primary latch switch, the Secondary latch switch and the short switch to the door hook assembly as shown in ILL.**
   NOTE:
   No specific individual adjustments during installation of the Primary latch switch, Secondary latch switch or Short switch to the door hook are required.
2. **When mounting the door hook assembly to the oven assembly, adjust the door hook assembly by moving it in the direction of the arrows in the illustration so that the oven door will not have any play in it. Check for play in the door by pulling the door assembly. Make sure that the latch keys move smoothly after adjustment is completed. Completely tighten the screws holding the door hook assembly to the oven assembly.**
3. **Reconnect the short switch and check the continuity of the monitor circuit and all latch switches again by following the component test procedures.**



2.2. Measurement of microwave output

The output power of the magnetron can be determined by performing IEC standard test procedures. However,due to the complexity of IEC test procedures, it is recommended to test the magnetron using the simple method outlined below.

Necessary Equipment:

***1 liter beaker *Glass thermometer / *Wrist watch or stopwatch**

NOTE:

Check the line voltage under load.Low voltage will lower the magnetron output. Take the temperature readings and heating time as accurately as possible.

1. **Fill the beaker with exactly one liter of tap water.Stir the water using the thermometer and record the water's temperature. (recorded as T1).**
2. **Place the beaker on the center of glass tray. / Set the oven for High power and heat it for exactly one minute.**
3. **Stir the water again and read the temperature of the water. (recorded as T2).**
4. **The normal temperature rise at High power level for each model is as shown in table.**

TABLE (1L-1min.test)

RATED OUTPUT	TEMPERATURE RISE
1100W	Min. 16.9°F(9.4°C)
1200W	Min. 18.5°F(10.3°C)

3. PROCEDURE FOR MEASURING MICROWAVE ENERGY LEAKAGE

WARNING

Check for radiation leakage after every servicing. Should the leakage be more than 2 mW/cm^2 (1mW/cm^2 for Canada) inform PASC, PSC, or PCI immediately. After repairing or replacing any radiation safety device, keep a written record for future reference, as required by D.H.H.S. and Health and Welfare Canada regulation. This requirement must be strictly observed. In addition, the leakage reading must be recorded on the service repair ticket while in the customer's home.

NOTE:

The U.S. Government standard is 5 mW/cm^2 while in the customer's home. 2mW/cm^2 stated here is our own voluntary standard. (1mW/cm^2 for Canada)

3.1. Equipment

- Electromagnatic radiation monitor
- Glass thermometer 212°F or 100°C
- 600cc glass beaker

3.2. Procedure for measuring radiation leakage

Note before measuring.

- Do not exceed meter full scale deflection. Leakage monitor should initially be set to the highest scale.
- To prevent false readings the test probe should be held by the grip portion of the handle only and moved along the shaded area in Figure no faster than 1 inch/sec (2.5cm/sec).
- Leakage with the outer panel removed ..... less than 5mW/cm^2.
- Leakage for a fully assembled oven with door normally closed ..... less than 2mW/cm^2 (1mW/cm^2 for Canada).
- Leakage for a fully assembled oven [Before the latch switch (primary) is interrupted] while pulling the door ..... less than 2mW/cm^2.

1. Pour 275 ± 15cc (9ozs± 1/2oz) of 20°C ± 5°C (68° ± 9°F) water in a beaker which is graduated to 600cc, and place in the center of the oven.
2. Set the radiation monitor to 2450MHz and use it following the manufacturer's recommended test procedure to assure correct results.
3. When measuring the leakage, always use the 2 inch (5cm) spacer supplied with the probe.
4. Tap the start pad or set the timer and with the magnetron oscillating, measure the leakage by holding the probe perpendicular to the surface being measured.

3.2.1. Measurement with the outer panel removed.

Whenever you replace the magnetron, measure for radiation leakage before the outer panel is installed and after all necessary components are replaced or adjusted. Special care should be taken in measuring around the magnetron.

WARNING
Avoid contacting any high voltage parts.

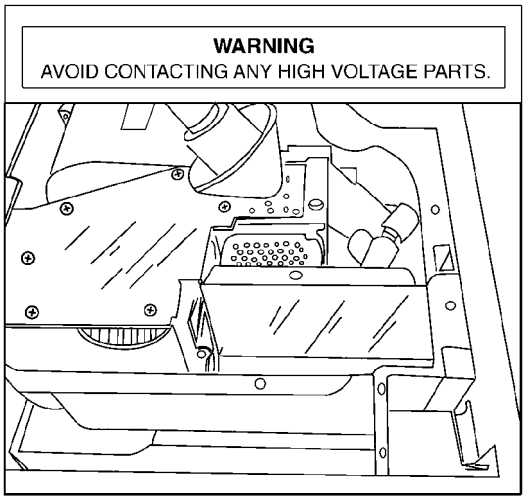
3.2.2. Measurements with a fully assembled oven.

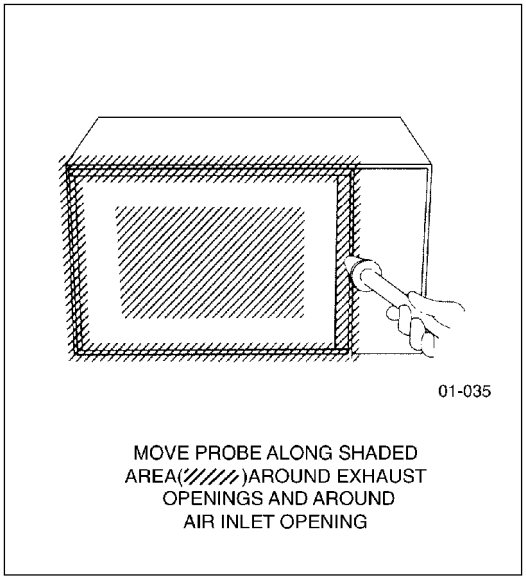
After all components, including outer panel are fully assembled, measure for radiation leakage around the door periphery, the door viewing window, the exhaust opening and air inlet openings.

3.3. Record keeping and notification after measurement

- After any adjustment or repair to a microwave oven, a leakage reading must be taken. Record this leakage reading on the repair ticket even if it is zero.
  A copy of this repair ticket and the microwave leakage reading should be kept by repair facility.
- Should the radiation leakage be more than 2 mW/cm^2 (1mW/cm for Canada) after determining that all parts are in good condition, functioning properly, and genuine replacement parts as listed in this manual have been used, immediately notify PASC, PSC or PCI.

3.4. At least once a year, have the radiation monitor checked for calibration by its manufacturer.





4. SIMPLE WAY OF H.V. INVERTER/MAGNETRON TROUBLESHOUTING

Purpose:
Simple way (3/23 seconds rule) of identifying whether it's Magnetron, Inverter, or others.

Set-up:
The unit under question is connected through the Ammeter as shown below.

Procedure:

Follow the matrix table below to identify the problem source.

Note:

Do not replace both Inverter board and Magnetron simultaneously and automatically without going through this procedure.

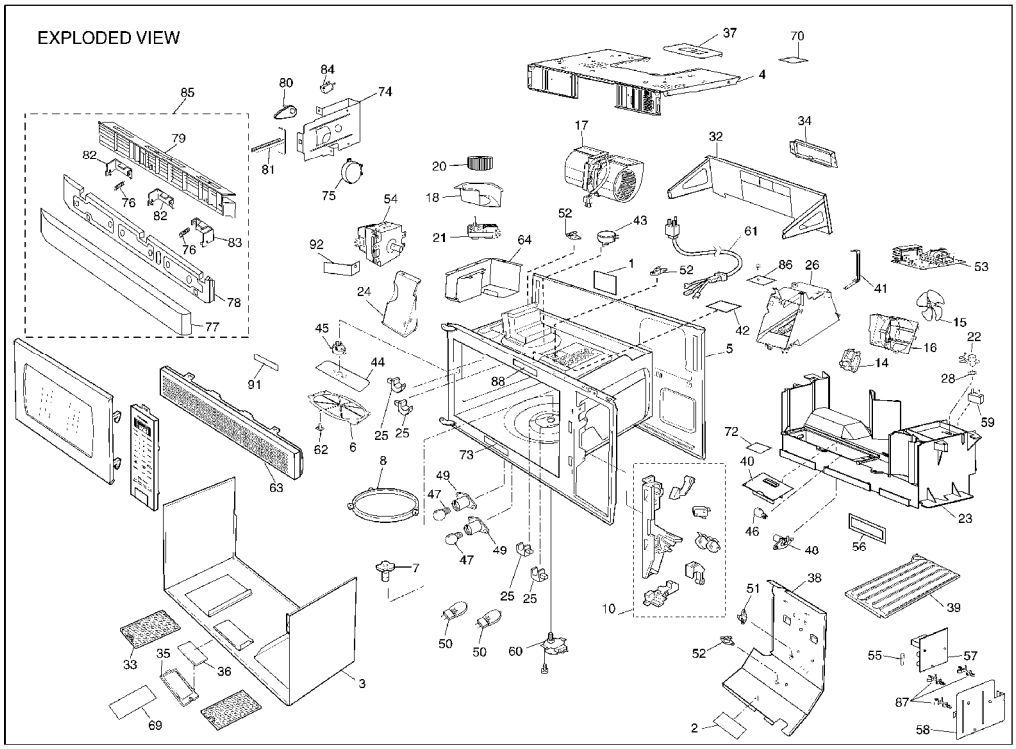
Power will:	Ammeter reading is:	To do:	Remedy:
Shut off in 23 seconds after "Start".	1. Between 0.5A and 1.0A.	Check and repair open magnetron circuit	Open magnetron wir between Inverter and magnetron terminal.
	2. Between 1.0A and 2.0A.	Check continuity of D702 in Inverter PCB.	
		1. D702 shorted	Replace H.V.Inverter (F606Y6G00AP/F606
		2. D702 is OK	Replace magnetron
Shut off in 3 seconds after "Start"	1. Less than 0.5A	Check open circuit: Latch Switch, DPC, Power Relay and CN701	Replace defective component(s), or co switch, cables and connectors.

5. H.V.INVERTER BOARD MAIN PARTS LIST (F606Y6G00AP/F606Y6G00CP)

Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
C707		ECWH30822JUA	CAPACITOR	1	8200PF,3000VDC
C706		ECWH30562JUA	CAPACITOR	1	5600PF,3000VDC
D701,D702	⚠	B0FBAZ000001	DIODE SI	2	
DB701		B0FBBS000001	BRIDGE DIODE	1	20A,600V
L701		F50206G00AP	CHOKE COIL	1	
Q701		B1JAGV000008	TRANSISTOR SI	1	900V
T701		A609A6G00AP	H.V. TRANSFORMER	1	

6. EXPLODED VIEW AND PARTS LIST

6.1. EXPLODED VIEW



6.2. PARTS LIST

NOTE:

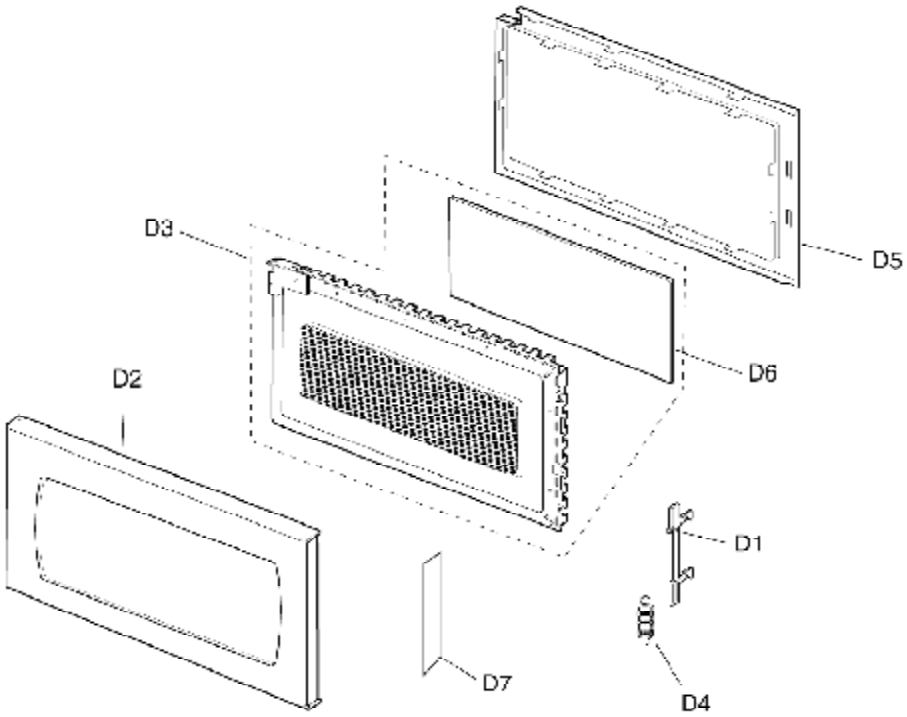
1. **When ordering replacement part(s), please use part number(s) shown in this part list.**
   Do not use description of the part.
2. **Important safety notice:**
   Components identified by ⚠ mark have special characteristics important for safety.
   When replacing any of these components, use only manufacture's specified parts.

Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
1		F00205H00AP	CAUTION LABEL	1	APH
1		F00067600CP	CAUTION LABEL	1	CPH
2		F00336Z00AP	FUSE LABEL	1	
3		F110D6Z00SAP	CABINET BODY (U)	1	P295SF APH,H264SFR APH,S254SFR APH
3		F110D6Z00SCP	CABINET BODY (U)	1	P295SF CPH
3		F110D6Z00BAP	CABINET BODY (U)	1	P295BF,H275SF/ BF,S255BF,S245BF,H264BFR,S254BFR
3		F110D6Z00HAP	CABINET BODY (U)	1	P295WF,H275WF,S255WF,S245WF,H264WFR,S254WF
3		F110D6Z00QAP	CABINET BODY (U)	1	H275QF
4		F100D6Z00AP	BASE PLATE (U)	1	P295 APH/CPH
4		F100D6Z80AP	BASE PLATE (U)	1	EXCEPT P295 APH/CPH
5	⚠	F201A6F00AP	OVEN (U)	1	P295 APH/CPH,H275 APH/CPH,S255 CPH,H264*FR API
5	⚠	F201A6F20AP	OVEN (U)	1	S255 APH,S245 CPH,S254*FR APH
6		F20115H00AP	COVER	1	
7		F21314Y00AP	PULLY SHAFT	1	
8		F290D5Q00AP	ROLLER RING (U)	1	
10	⚠	E393C8000BP	DOOR HOOK (U)	1	
14		F40016Z00AP	FAN MOTOR A	1	FOR INVERTER (U) COOLING
15		F40085H00AP	FAN BLADE	1	FOR INVERTER (U) COOLING
16		F40256Z00AP	ORIFICE	1	
17		F401W6Z00AP	BLOWER MOTOR (U)	1	P295 APH/CPH,H275 APH/CPH
17		F401W6Z60AP	BLOWER MOTOR (U)	1	S255 APH/CPH,S245 CPH,H264*FR APH,S254*FR APH
18		F42486Z00AP	FAN CASE C	1	
20		F42505H00AP	SIROCCO FAN C	1	
21		F42676F00AP	FAN MOTOR B	1	FOR MAGNETRON COOLING
22		F601L6F00AP	SENSOR (BU)	1	P295 APH/CPH,H275 APH/CPH,H264*FR APH
23		F40246Z00AP	EXHAUST GUIDE A	1	
24		F44775H00AP	EXHAUST GUIDE	1	
25		F20025H00AP	RACK SUPPORT	4	P295 APH/CPH,H275 APH/CPH,S255 CPH, H264*FR APH
26		F65856Z00AP	INVERTER BRACKET	1	
28		F62386F00AP	WASHER	1	
32		F100T5H00AP	BACK PLATE (BU)	1	
33		F400B6Z00AP	FILTER (U)	2	
34		F400K5H00AP	EXHAUST ADAPTER	1	
35		F63175H00SAP	LAMP HOLDER	1	P295SF APH,H264SFR,S254SFR
35		F63176F00SAP	LAMP HOLDER	1	P295SF CPH
35		F63175H10BAP	LAMP HOLDER	1	P295BF,H275SF/BF,S255BF,S245BF, H264BFR,S254BFR
35		F63175H10HAP	LAMP HOLDER	1	P295WF,H275WF,S255WF,S245WF, H264WFR,S254WFR
35		F63175V20QAP	LAMP HOLDER	1	H275QF
36		F64375H00AP	GLASS PLATE	1	
37		F41586Z00AP	FAN INSTALLATION PLATE	1	
38		F42176Z00AP	COVER PLATE	1	
39		F42205H00AP	COVER PLATE B	1	
40		F607V6Z00AP	LAMP COVER (U)	1	

Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
41		F61846Z00AP	GROUNDING PLATE	1	
42		F60405H00AP	LAMP MEMBRANE	1	
43		F61446Z00AP	STIRRER MOTOR	1	
44		F20155H00AP	STIRRER	1	
45		F20165H00AP	ANTENNA SUPPORT	1	
46		F60305H00AP	INCANDESCENT LAMP	1	
47		F60305H00AP	INCANDESCENT LAMP	2	EXCEPT P295 APH/CPH
48		F61525H00AP	SOCKET	1	
49		F61525H00AP	SOCKET	2	EXCEPT P295 APH/CPH
50		F67536Z00AP	HEAD LAMP	2	P295 APH/CPH
51		F61456F00AP	THERMAL CUTOUT	1	
52		F61456N60AP	THERMAL CUTOUT	3	
53	⚠	F606Y6G00AP	H.V.INVERTER (U)	1	
54	⚠	2M261-M32F	MAGNETRON	1	APH
54	⚠	2M261-M32J	MAGNETRON	1	CPH
55	⚠	F62307A00AP	FUSE	1	20A/125V
56		F400B6Z20AP	CARBON FILTER (U)	1	
57		J692Y7D00AP	NOISE FILTER (U)	1	APH
57		J692Y4T00CPR	NOISE FILTER (U)	1	CPH
58		F68006Z00AP	NOISE FILTER BRACKET	1	
59		F66986Z00AP	MOTOR CAPACITOR	1	P295 APH/CPH,H275 APH/CPH
59		F66985H00AP	MOTOR CAPACITOR	1	S255 APH/CPH,S245 CPH,H264*FR APH,S254*FR APH
60		F63266F00AP	TURNTABLE MOTOR	1	
61	⚠	F900C6Z00AP	AC CORD W/PLUG	1	APH
61	⚠	F900C6Z00CP	AC CORD W/PLUG	1	CPH
62		F90804W00AP	CANOE CLIP	1	FOR COVER
63		F101V6Z20SAP	VENT GRILLE (U)	1	H275SF
63		F101V6Z30BAP	VENT GRILLE (U)	1	H275BF,S255BF
63		F101V6Z30HAP	VENT GRILLE (U)	1	H275WF,S255WF
63		F101V6Z30QAP	VENT GRILLE (U)	1	H275QF
63		F101V6F10SAP	VENT GRILLE (U)	1	H264SFR,S254SFR
63		F101V6F10BAP	VENT GRILLE (U)	1	S245BF,H264BFR,S254BFR
63		F101V6F10HAP	VENT GRILLE (U)	1	S245WF,H264WFR,S254WFR
64		F48436Z00AP	INHALE GUIDE A	1	
69		F01725H00AP	CAUTION LABEL	1	
70		F00565H00AP	CAUTION LABEL	1	
72		F00725H00AP	CAUTION LABEL	1	
73		F03346Z20AP	MENU LABEL	1	H275 APH
73		F03346Z20CP	MENU LABEL	1	H275 CPH
74		F66396F00AP	MOTOR INSTALLATION BRACKET	1	P295 APH/CPH
75		F63266F00AP	DRIVE MOTOR	1	P295 APH/CPH
76		F11736F00AP	SPRING	2	P295 APH/CPH
77		F11196Z00SAP	VENT GRILLE OSTENTATIOUS COVER	1	P295SF APH

Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
77		F11196F00SAP	VENT GRILLE OSTENTATIOUS COVER	1	P295SF CPH
77		F11196Z00BAP	VENT GRILLE OSTENTATIOUS COVER	1	P295BF APH/CPH
77		F11196Z00HAP	VENT GRILLE OSTENTATIOUS COVER	1	P295WF APH/CPH
78		F11206F00AP	VENT GRILLE INSTALLATION BRACKET	1	P295 APH/CPH
79		F11176F00SAP	VENT GRILLE	1	P295SF,P295BF
79		F11176Z00HAP	VENT GRILLE	1	P295WF
80		F48236F00AP	CAM	1	P295 APH/CPH
81		F48246F00AP	SHAFT	1	P295 APH/CPH
82		F111B6F00AP	BACKSTOP AU	2	P295 APH/CPH
83		F111C6F00AP	BACKSTOP BU	1	P295 APH/CPH
84		J61424T00AP	MICRO SWITCH	1	P295 APH/CPH
85		F101V6Z00SAP	VENT GRILLE (U)	1	P295SF APH
85		F101V6F00SAP	VENT GRILLE (U)	1	P295SF CPH
85		F101V6Z00BAP	VENT GRILLE (U)	1	P295BF
85		F101V6Z00HAP	VENT GRILLE (U)	1	P295WF
86		F90356Z00AP	AC CORD FIXING PLATE	1	
87		A66135H00AP	BRACKET A	3	
88		F04466Z20AP	FUNCTION LABEL	1	H275 APH
88		F04466Z20CP	FUNCTION LABEL	1	H275 CPH
91		F01956F10AP	CAUTION LABEL	1	P295 APH
91		F01956F10CP	CAUTION LABEL	1	P295 CPH
92		F40316Z00AP	AIR BAFFLE C	1	P295 APH/CPH,H275 APH/CPH

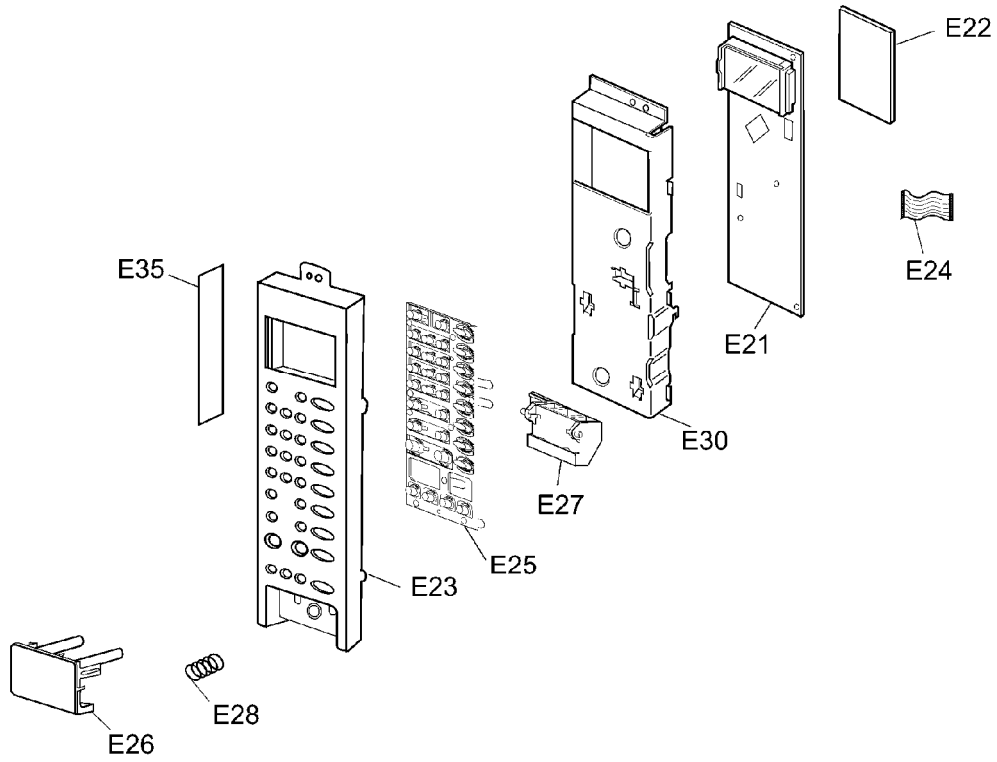
6.3. DOOR ASSEMBLY



Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
D1		F3018-1200	DOOR KEY A	1	
D2	⚠	F302A6F00SAP	DOOR A (U)	1	P295SF APH/CPH
D2	⚠	F302A6Z00BAP	DOOR A (U)	1	P295BF APH/CPH
D2	⚠	F302A6Z00HAP	DOOR A (U)	1	P295WF APH/CPH
D2	⚠	F302A6Z20SAP	DOOR A (U)	1	H275SF APH/CPH
D2	⚠	F302A6Z30BAP	DOOR A (U)	1	H275BF APH/CPH,S255BF APH/CPH
D2	⚠	F302A6Z30HAP	DOOR A (U)	1	H275WF APH/CPH,S255WF APH/CPH
D2	⚠	F302A6Z30QAP	DOOR A (U)	1	H275QF APH/CPH
D2	⚠	F302A5V10SAP	DOOR A (U)	1	H264SFR APH
D2	⚠	F302A5V20BAP	DOOR A (U)	1	H264BFR APH
D2	⚠	F302A5V20HAP	DOOR A (U)	1	H264WFR APH
D2	⚠	F302A6F20SAP	DOOR A (U)	1	S254SFR APH
D2	⚠	F302A6F20BAP	DOOR A (U)	1	S254BFR APH,S245BF CPH
D2	⚠	F302A6F20HAP	DOOR A (U)	1	S254WFR APH,S245WF CPH
D3	⚠	F302K5H00AP	DOOR E (U)	1	
D4		F30215G10XN	DOOR KEY SPRING	1	
D5	⚠	F30855H00AP	DOOR C	1	
D6	⚠	F31455H00AP	DOOR SCREEN A	1	
D7		F02459660AP	DHHS LABEL	1	APH
D7		F04114180CP	HC LABEL	1	CPH

6.4. ESCUTCHEON BASE ASSEMBLY

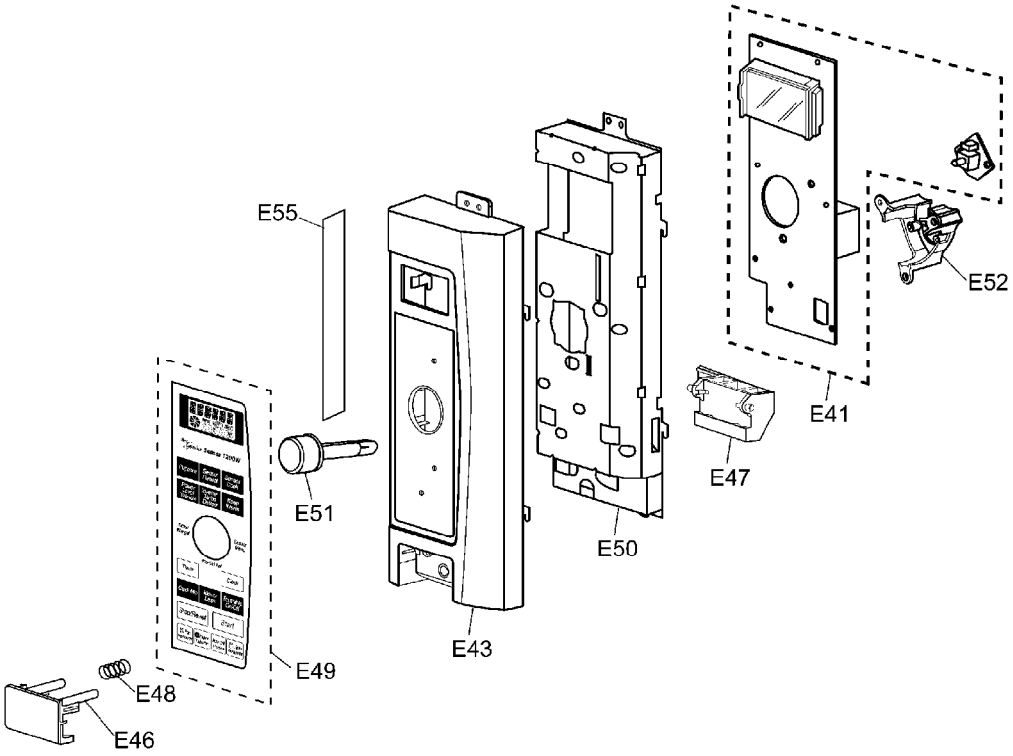
6.4.1. NN-P295 APH/CPH



Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
E21		F603L6Z00AP	D.P.CIRCUIT (AU)	1	P295SF/BF/WF APH
E21		F603L6Z00CP	D.P.CIRCUIT (AU)	1	P295SF/BF/WF CPH
E22		F603Y6Z00AP	D.P.CIRCUIT (DU)	1	P295SF/BF/WF APH
E22		F603Y6Z00CP	D.P.CIRCUIT (DU)	1	P295SF/BF/WF CPH
E23		F800L6Z00SAP	ESCUTCHEON BASE (U)	1	P295SF APH
E23		F800L6Z00BAP	ESCUTCHEON BASE (U)	1	P295BF APH
E23		F800L6Z00HAP	ESCUTCHEON BASE (U)	1	P295WF APH
E23		F800L6Z00SCP	ESCUTCHEON BASE (U)	1	P295SF CPH
E23		F800L6Z00BCP	ESCUTCHEON BASE (U)	1	P295BF CPH
E23		F800L6Z00HCP	ESCUTCHEON BASE (U)	1	P295WF CPH
E24		F66166Z00AP	FLAT CABLE	1	P295 APH/CPH
E25		F82986F00SAP	BUTTON	1	P295SF APH/CPH
E25		F82986Z00BAP	BUTTON	1	P295BF APH/CPH
E25		F82986Z00HAP	BUTTON	1	P295WF APH/CPH
E26		F891P6F00SAP	DOOR OPENING BUTTON	1	P295SF APH/CPH
E26		F891P6Z00BAP	DOOR OPENING BUTTON	1	P295BF APH/CPH
E26		F891P6Z00HAP	DOOR OPENING BUTTON	1	P295WF APH/CPH
E27		F82566F00AP	DOOR OPENING LEVER	1	P295 APH/CPH
E28		F80375950AP	COOK BUTTON SPRING	1	
E30		F81276F00AP	BACK PANEL	1	P295 APH/CPH
E35		F00076Z00SAP	NAME PLATE	1	P295SF APH
E35		F00076Z00BAP	NAME PLATE	1	P295BF APH
E35		F00076Z00HAP	NAME PLATE	1	P295WF APH
E35		F00076Z00SCP	NAME PLATE	1	P295SF CPH

Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
E35		F00076Z00BCP	NAME PLATE	1	P295BF CPH
E35		F00076Z00HCP	NAME PLATE	1	P295WF CPH

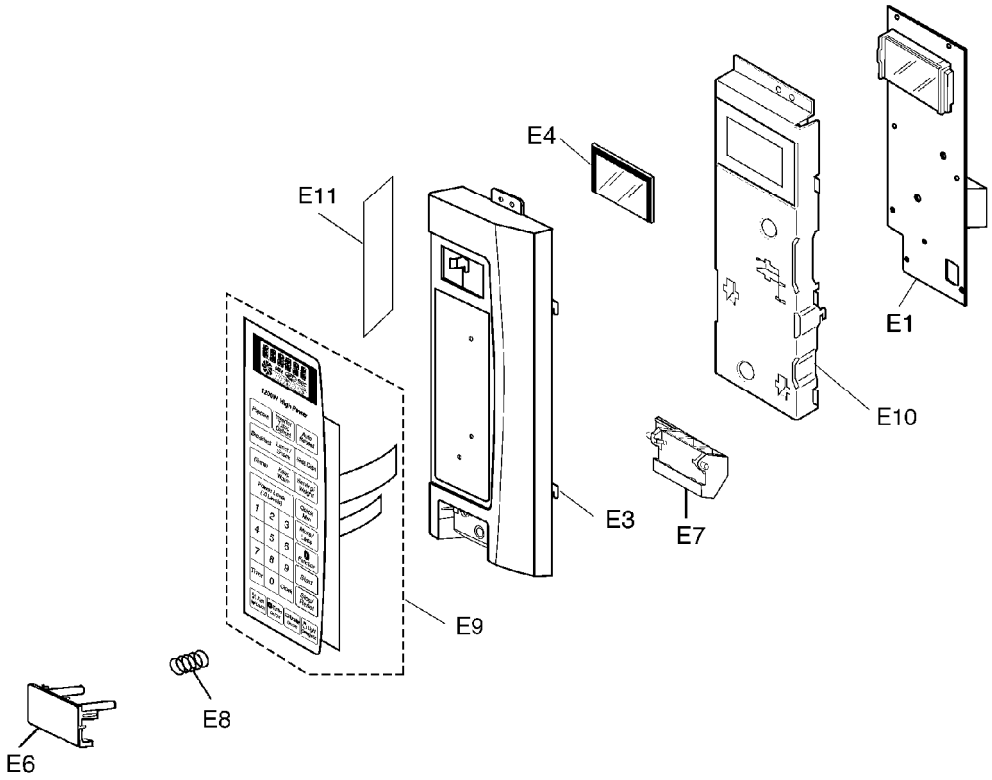
6.4.2. NN-H275 APH/CPH



Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
E41		F603L6Z20AP	D.P.CIRCUIT (AU)	1	H275SF/BF/WF/QF APH
E41		F603L6Z20CP	D.P.CIRCUIT (AU)	1	H275SF/BF/WF/QF CPH
E43		F800L6Z20SAP	ESCUTCHEON BASE (U)	1	H275SF APH
E43		F800L6Z20SCP	ESCUTCHEON BASE (U)	1	H275SF CPH
E43		F80346Z30BAP	ESCUTCHEON BASE	1	H275BF APH/CPH
E43		F80346Z30HAP	ESCUTCHEON BASE	1	H275WF APH/CPH
E43		F80346Z30QAP	ESCUTCHEON BASE	1	H275QF APH/CPH
E46		F891P6Z20SAP	DOOR OPENING BUTTON (U)	1	H275SF APH/CPH
E46		F80726Z30BAP	DOOR OPENING BUTTON	1	H275BF APH/CPH
E46		F80726Z30HAP	DOOR OPENING BUTTON	1	H275WF APH/CPH
E46		F80726Z30QAP	DOOR OPENING BUTTON	1	H275QF APH/CPH
E47		F82566F00AP	DOOR OPENING LEVER	1	
E48		F80375950AP	COOK BUTTON SPRING	1	
E49		F630Y6Z20SAP	MEMBRANE SWITCH (U)	1	H275SF APH
E49		F630Y6Z20SCP	MEMBRANE SWITCH (U)	1	H275SF CPH
E49		F630Y6Z30BAP	MEMBRANE SWITCH (U)	1	H275BF APH
E49		F630Y6Z30BCP	MEMBRANE SWITCH (U)	1	H275BF CPH
E49		F630Y6Z30HAP	MEMBRANE SWITCH (U)	1	H275WF APH
E49		F630Y6Z30HCP	MEMBRANE SWITCH (U)	1	H275WF CPH
E49		F630Y6Z30QAP	MEMBRANE SWITCH (U)	1	H275QF APH
E49		F630Y6Z30QCP	MEMBRANE SWITCH (U)	1	H275QF CPH
E50		F81276Z20AP	BACK PANEL	1	H275 APH/CPH
E51		F803G7Z20BAP	POP-UP DIAL (U)	1	H275SF APH/CPH,H275BF APH/CPH

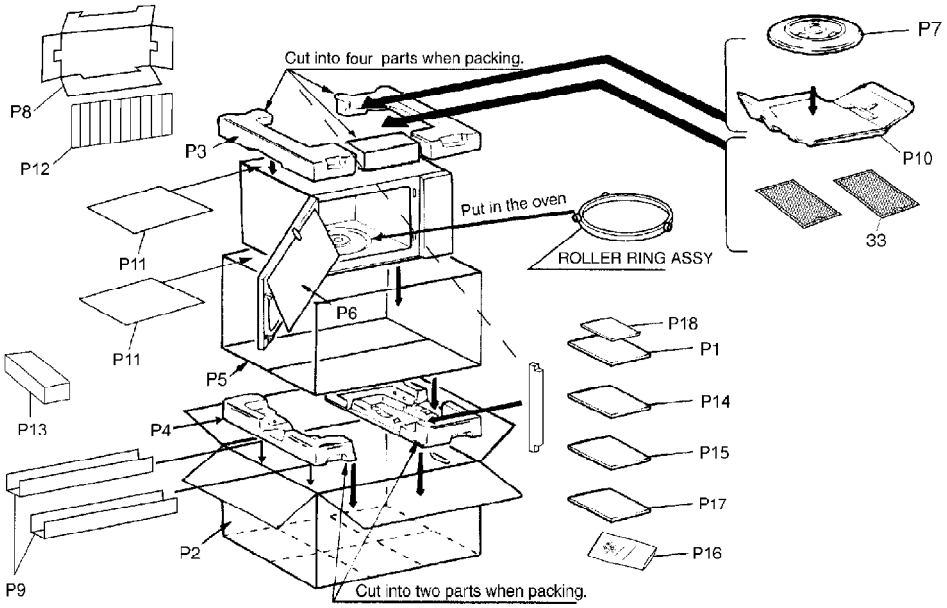
Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
E51		F803G7Z20HAP	POP-UP DIAL (U)	1	H275WF APH/CPH
E51		F803G7Z20QAP	POP-UP DIAL (U)	1	H275QF APH/CPH
E52		F801876Z20AP	BACKSTOP	1	H275 APH/CPH
E55		F00076Z20SAP	NAME PLATE	1	H275SF APH
E55		F00076Z30BAP	NAME PLATE	1	H275BF APH
E55		F00076Z30HAP	NAME PLATE	1	H275WF APH
E55		F00076Z30QAP	NAME PLATE	1	H275QF APH
E55		F00076Z20SCP	NAME PLATE	1	H275SF CPH
E55		F00076Z30BCP	NAME PLATE	1	H275BF CPH
E55		F00076Z30HCP	NAME PLATE	1	H275WF CPH
E55		F00076Z30QCP	NAME PLATE	1	H275QF CPH

6.4.3. NN-S255 APH/CPH, S245 CPH, H264*FR APH, S254*FR APH



Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
E1		F603L6Z60AP	D.P.CIRCUIT (AU)	1	S255BF/WF APH
E1		F603L6Z60CP	D.P.CIRCUIT (AU)	1	S255BF/WF CPH
E1		F603L6Y90CP	D.P.CIRCUIT (AU)	1	S245BF/WF CPH
E1		F603L6Z80AP	D.P.CIRCUIT (AU)	1	H264*FR APH
E1		F603L6Z90AP	D.P.CIRCUIT (AU)	1	S254*FR APH
E3		F80346Z60BAP	ESCUTCHEON BASE	1	S255BF APH/CPH
E3		F80346Z60HAP	ESCUTCHEON BASE	1	S255WF APH/CPH
E3		F800L5H00SAP	ESCUTCHEON BASE (U)	1	H264SFR APH,S254SFR APH
E3		F80345H10BAP	ESCUTCHEON BASE	1	S245BF CPH,H264BFR APH,S254BFR APH
E3		F80345H10HAP	ESCUTCHEON BASE	1	S245WF CPH,H264WFR APH,S254WFR APH
E4		F80025H00AP	ESCUTCHEON B	1	S245 CPH,H264*FR APH,S254*FR APH
E6		F80726Z30BAP	DOOR OPENING BUTTON	1	S255BF APH/CPH
E6		F80726Z30HAP	DOOR OPENING BUTTON	1	S255WF APH/CPH
E6		F80725H00SAP	DOOR OPENING BUTTON (U)	1	H264SFR APH,S254SFR APH
E6		F80725H10BAP	DOOR OPENING BUTTON	1	S245BF,H264BFR
E6		F80725H10HAP	DOOR OPENING BUTTON	1	S245WF,H264WFR
E7		F82566F00AP	DOOR OPENING LEVER	1	S255 APH/CPH
E7		F82565H00AP	DOOR OPENING LEVER	1	S245 CPH,H264*FR APH,S254*FR APH
E8		F80375950AP	COOK BUTTON SPRING	1	
E9		F630Y6Z60BAP	MEMBRANE SWITCH (U)	1	S255BF APH
E9		F630Y6Z60HAP	MEMBRANE SWITCH (U)	1	S255WF APH
E9		F630Y6Z60BCP	MEMBRANE SWITCH (U)	1	S255BF CPH
E9		F630Y6Z60HCP	MEMBRANE SWITCH (U)	1	S255WF CPH
E9		F630Y6F20BCP	MEMBRANE SWITCH (U)	1	S245BF CPH
E9		F630Y6F20HCP	MEMBRANE SWITCH (U)	1	S245WF CPH
E9		F630Y6F10BAP	MEMBRANE SWITCH (U)	1	H264SFR/BFR APH
E9		F630Y6F10HAP	MEMBRANE SWITCH (U)	1	H264WFR APH
E9		F630Y6F20BAP	MEMBRANE SWITCH (U)	1	S254SFR/BFR APH
E9		F630Y6F20HAP	MEMBRANE SWITCH (U)	1	S254WFR APH
E10		F81276Z60AP	BACK PLATE	1	S255 APH/CPH
E10		F81275H00AP	BACK PLATE	1	S245 CPH,H264*FR APH,S254*FR APH
E11		F00076Z60BAP	NAME PLATE	1	S255BF APH
E11		F00076Z60HAP	NAME PLATE	1	S255WF APH
E11		F00076Z60BCP	NAME PLATE	1	S255BF CPH
E11		F00076Z60HCP	NAME PLATE	1	S255WF CPH
E11		F00076Y90BCP	NAME PLATE	1	S245BF CPH
E11		F00076Y90HCP	NAME PLATE	1	S245WF CPH
E11		F00076Z80SAP	NAME PLATE	1	H264SFR APH
E11		F00076Z80BAP	NAME PLATE	1	H264BFR APH
E11		F00076Z80HAP	NAME PLATE	1	H264WFR APH
E11		F00076Z90SAP	NAME PLATE	1	S254SFR APH
E11		F00076Z90BAP	NAME PLATE	1	S254BFR APH
E11		F00076Z90HAP	NAME PLATE	1	S254WFR APH

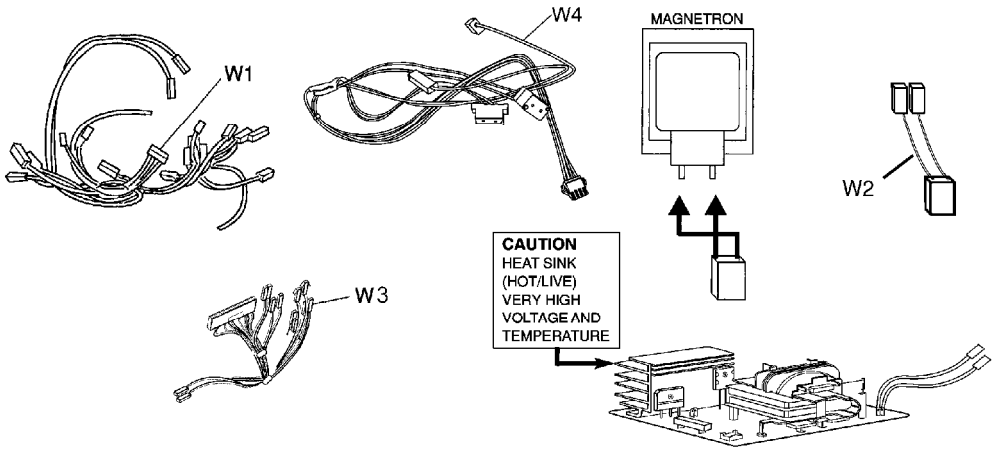
6.5. PACKING AND ACCESSORIES



Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
P1		F00036Z00AP	INSTRUCTION MANUAL	1	P295SF/BF/WF APH
P1		F00036Z00CP	INSTRUCTION MANUAL	1	P295SF/BF/WF CPH
P1		F00036Z20AP	INSTRUCTION MANUAL	1	H275SF/BF/WF/QF APH
P1		F00036Z20CP	INSTRUCTION MANUAL	1	H275SF/BF/WF/QF CPH
P1		F00036Z60AP	INSTRUCTION MANUAL	1	S255BF/WF APH
P1		F00036Z60CP	INSTRUCTION MANUAL	1	S255BF/WF CPH
P1		F00036Y90CP	INSTRUCTION MANUAL	1	S245BF/WF CPH
P1		F00036Z80AP	INSTRUCTION MANUAL	1	H264SFR/BFR/WFR APH,S254SFR/BFR/WFR APH
P2		F01026Z00SAP	PACKING CASE,PAPER	1	P295SF APH
P2		F01026Z00BAP	PACKING CASE,PAPER	1	P295BF APH
P2		F01026Z00HAP	PACKING CASE,PAPER	1	P295WF APH
P2		F01026Z00SCP	PACKING CASE,PAPER	1	P295SF CPH
P2		F01026Z00BCP	PACKING CASE,PAPER	1	P295BF CPH
P2		F01026Z00HCP	PACKING CASE,PAPER	1	P295WF CPH
P2		F01026Z20SAP	PACKING CASE,PAPER	1	H275SF APH
P2		F01026Z30BAP	PACKING CASE,PAPER	1	H275BF APH
P2		F01026Z30HAP	PACKING CASE,PAPER	1	H275WF APH
P2		F01026Z30QAP	PACKING CASE,PAPER	1	H275QF APH
P2		F01026Z20SCP	PACKING CASE,PAPER	1	H275SF CPH
P2		F01026Z30BCP	PACKING CASE,PAPER	1	H275BF CPH
P2		F01026Z30HCP	PACKING CASE,PAPER	1	H275WF CPH
P2		F01026Z30QCP	PACKING CASE,PAPER	1	H275QF CPH
P2		F01026Z60BAP	PACKING CASE,PAPER	1	S255BF APH
P2		F01026Z60HAP	PACKING CASE,PAPER	1	S255WF APH
P2		F01026Z60BCP	PACKING CASE,PAPER	1	S255BF CPH
P2		F01026Z60HCP	PACKING CASE,PAPER	1	S255WF CPH
P2		F01026Y90BCP	PACKING CASE,PAPER	1	S245BF CPH
P2		F01026Y90HCP	PACKING CASE,PAPER	1	S245WF CPH
P2		F01026Z80SAP	PACKING CASE,PAPER	1	H264SFR APH
P2		F01026Z80BAP	PACKING CASE,PAPER	1	H264BFR APH
P2		F01026Z80HAP	PACKING CASE,PAPER	1	H264WFR APH
P2		F01026Z90SAP	PACKING CASE,PAPER	1	S254SFR APH

Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
P2		F01026Z90BAP	PACKING CASE,PAPER	1	S254BFR APH
P2		F01026Z90HAP	PACKING CASE,PAPER	1	S254WFR APH
P3		F01045H00AP	UPPER FILLER	1	P295 APH/CPH,S245 CPH,H264*FR APH,S254*FR APH
P3		F01046Z20AP	UPPER FILLER	1	H275 APH/CPH,S255 APH/CPH
P4		F01055H00AP	LOWER FILLER	1	P295 APH/CPH,S245 CPH,H264*FR APH,S254*FR APH
P4		F01056Z20AP	LOWER FILLER	1	H275 APH/CPH,S255 APH/CPH
P5		F01065H00AP	P.E.BAG	1	
P6		F01075H00AP	DOOR SHEET	1	
P7		A06015H00AP	COOKING TRAY	1	
P8		F01175H00AP	TRAY PACKING B	1	P295 APH/CPH,H275 APH/CPH,S255 CPH,H264*FR APH
P9		F01485H00AP	REINFORCE BRACKET	2	
P10		F01085H00AP	TRAY PACKING	1	
P11		F01925H00AP	SHEET	2	
P12		F06025H00AP	OVEN RACK	1	P295 APH/CPH,H275 APH/CPH,S255 CPH,H264*FR APH
P13		F02185H00AP	PROTECTOR PACKING	1	
P14		F03136Z00AP	INSTALLATION INSTRUCTION	1	APH
P14		F03136Z00CP	INSTALLATION INSTRUCTION	1	CPH
P15		F04316Z00AP	UPPER-CABINET TEMPLATE	1	APH
P15		F04316Z00CP	UPPER-CABINET TEMPLATE	1	CPH
P16		F011F6Z00AP	ATTACHMENT	1	
P17		F04845V10AP	FILTER PURCHASE NOTICE	1	APH
P18		F04456Z00SCP	OVERLAY	1	P295SF CPH
P18		F04456Z00BCP	OVERLAY	1	P295BF CPH
P18		F04456Z00HCP	OVERLAY	1	P295WF CPH
P18		F04456Z20SCP	OVERLAY	1	H275SF CPH
P18		F04456Z30BCP	OVERLAY	1	H275BF CPH
P18		F04456Z30HCP	OVERLAY	1	H275WF CPH
P18		F04456Z30QCP	OVERLAY	1	H275QF CPH
P18		F04456Z60BCP	OVERLAY	1	S255BF CPH
P18		F04456Z60HCP	OVERLAY	1	S255WF CPH
P18		F04456F20BCP	OVERLAY	1	S245BF CPH
P18		F04456F20HCP	OVERLAY	1	S245WF CPH
P19		F011G6Z00AP	ATTACHMENT B	1	
33		F400B6Z00AP	FILTER (U)	2	

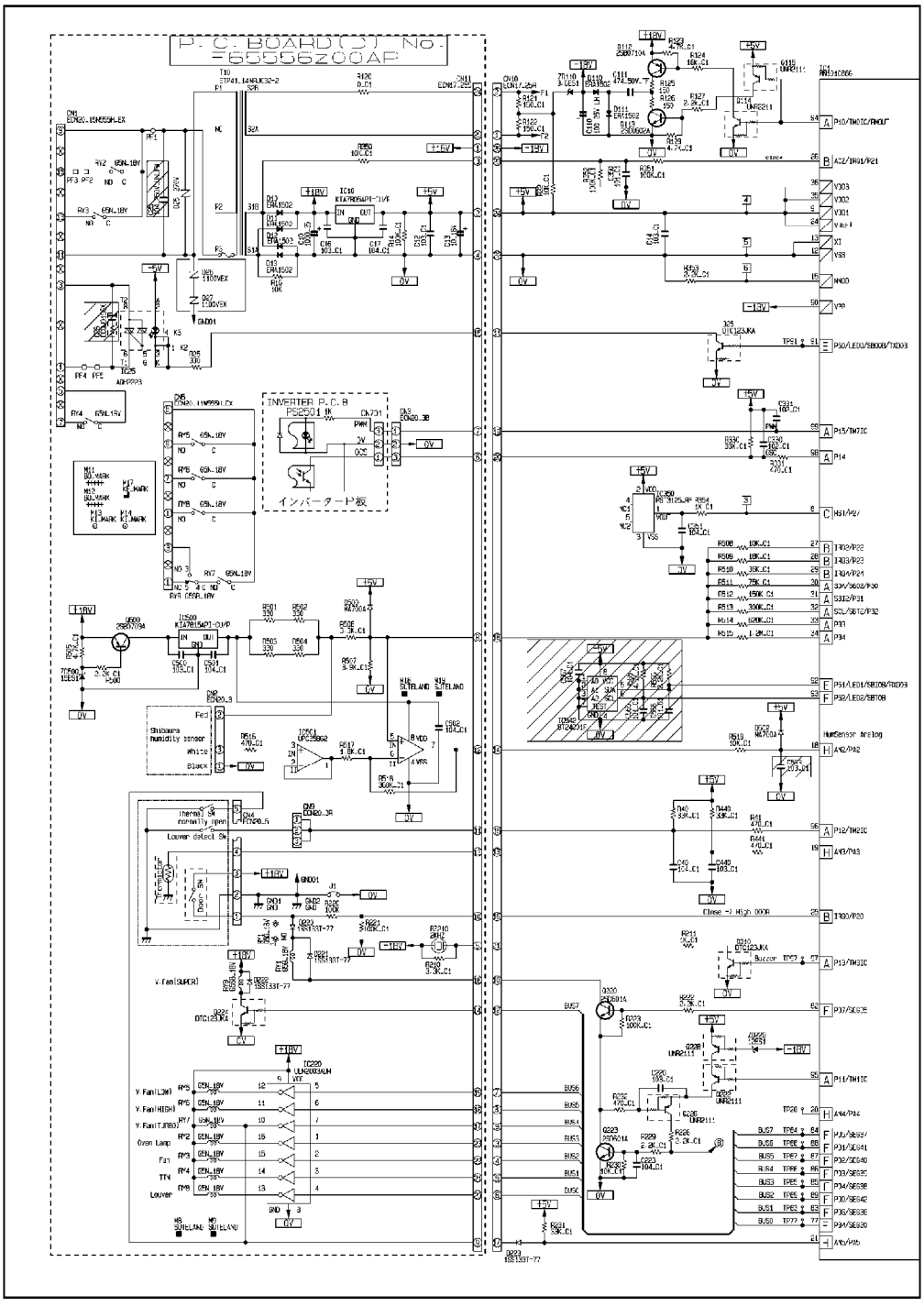
6.6. WIRING MATERIALS

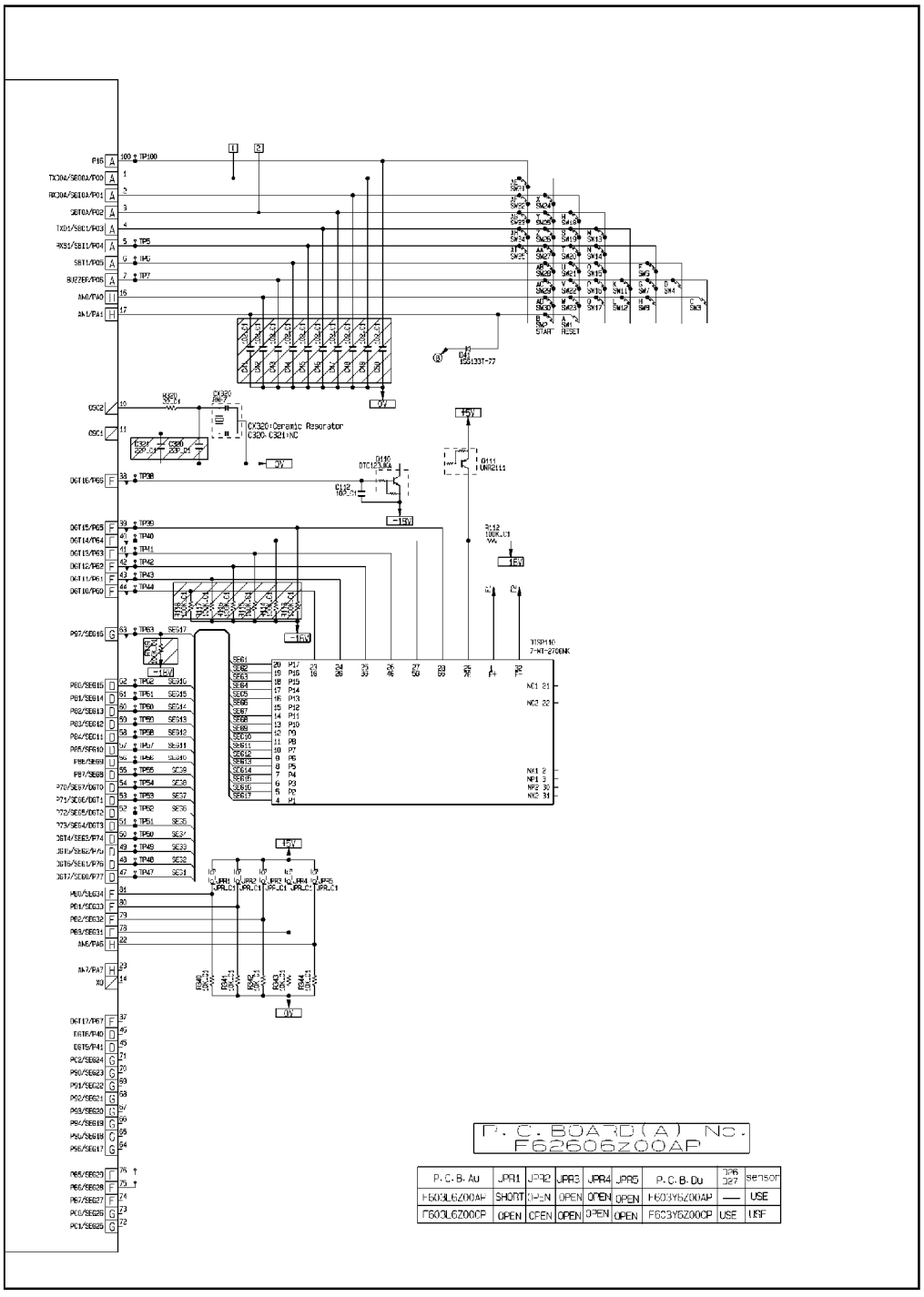


Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
W1		F030A6Z00AP	LEAD WIRE HARNESS	1	P295SF/BF/WF APH
W1		F030A6Z00CP	LEAD WIRE HARNESS	1	P295SF/BF/WF CPH
W1		F030A6Z20AP	LEAD WIRE HARNESS	1	H275SF/BF/WF/QF APH
W1		F030A6Z20CP	LEAD WIRE HARNESS	1	H275SF/BF/WF/QF CPH
W1		F030A6Z60AP	LEAD WIRE HARNESS	1	S255BF/WF APH
W1		F030A6Z60CP	LEAD WIRE HARNESS	1	S255BF/WF CPH
W1		F030A6Y90CP	LEAD WIRE HARNESS	1	S245BF/WF CPH
W1		F030A6Z80AP	LEAD WIRE HARNESS	1	H264*FR APH,S254*FR APH
W2		F030E5H00AP	H.V.LEAD WIRE	1	APH
W2		F030E5H00CP	H.V.LEAD WIRE	1	CPH
W3		F03536F00AP	LEAD WIRE HARNESS U	1	(INCLUDING CABEL CONNECTOR CN4)
W4		F03556Z00AP	LEAD WIRE HARNESS	1	P295 APH/CPH (INCLUDING SOCKET)

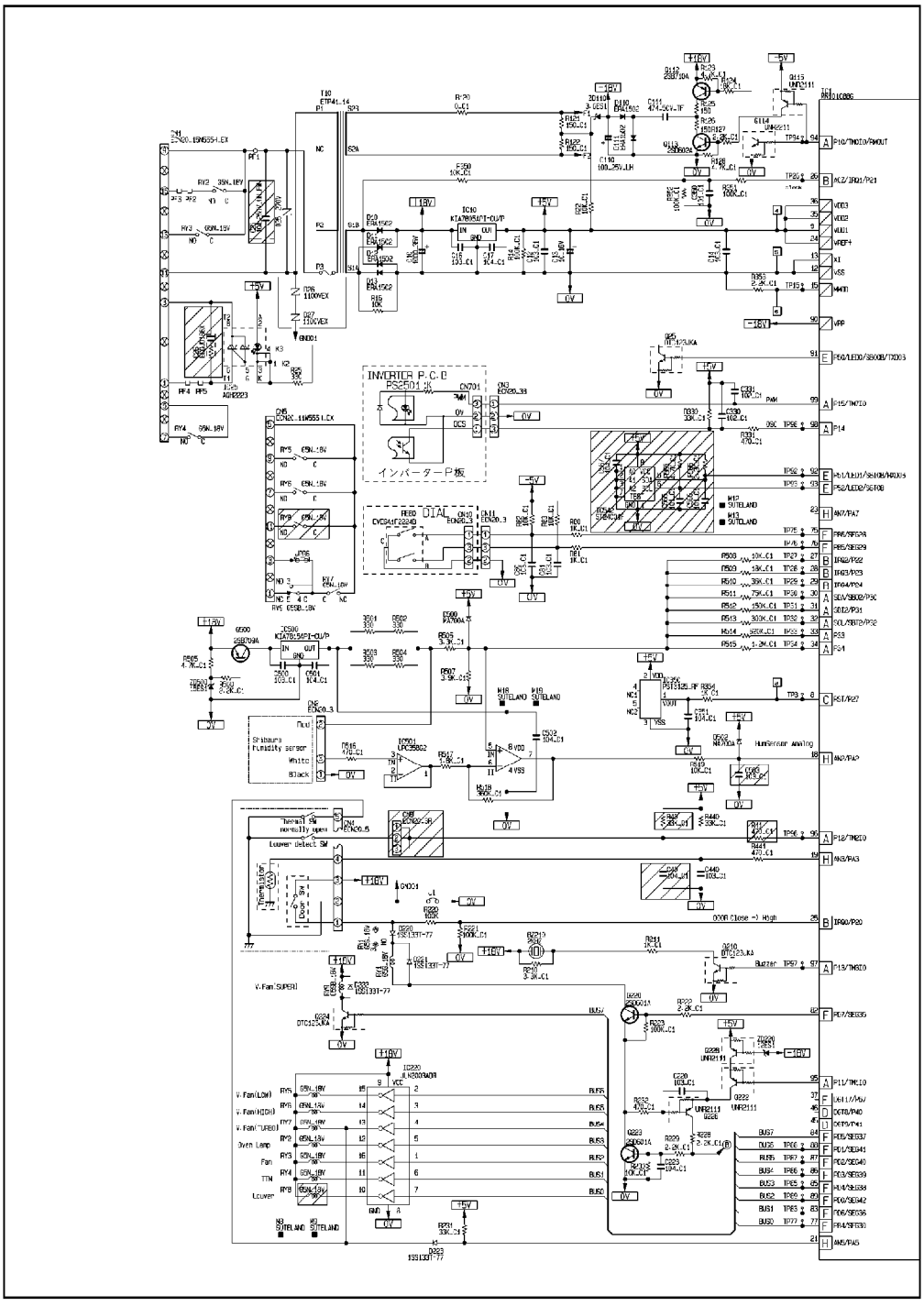
7. DIGITAL PROGRAMMER CIRCUIT

7.1. NN-P295 APH/CPH


P. C. BOARD (C) No.
F55556Z00AP
INVERTER P.C.B
インバーター基板
Shibaura humidity sensor
White
Black
Internal SW normally open
Louver detect SW
Door SW
Close ~) High DOOR
Buzzer
Oven Lamp
Fan
TTN
Louver
Y.Fan(LOW)
Y.Fan(HIGH)
Y.Fan(TURBO)
V.Fan(SWING)
HumSensor Analog



7.2. NN-H275 APH/CPH, NN-S255 APH/CPH


INVERTER P.C.B
PSC501 1K
インバーター P板
DVD541F2224D
Sitbourn
Humidity sensor
White
Black
Thermal SW
normally open
Lower Detect SW
Door
Switch
V.Fan(SUPER)
V.Fan(LOW)
V.Fan(HIGH)
V.Fan(TURBO)
Oven Lamp
Fan
TTN
Lower
M3 SUTELAND
M4 SUTELAND
M5 SUTELAND
M6 SUTELAND
M7 SUTELAND
M8 SUTELAND
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M11 SUTELAND
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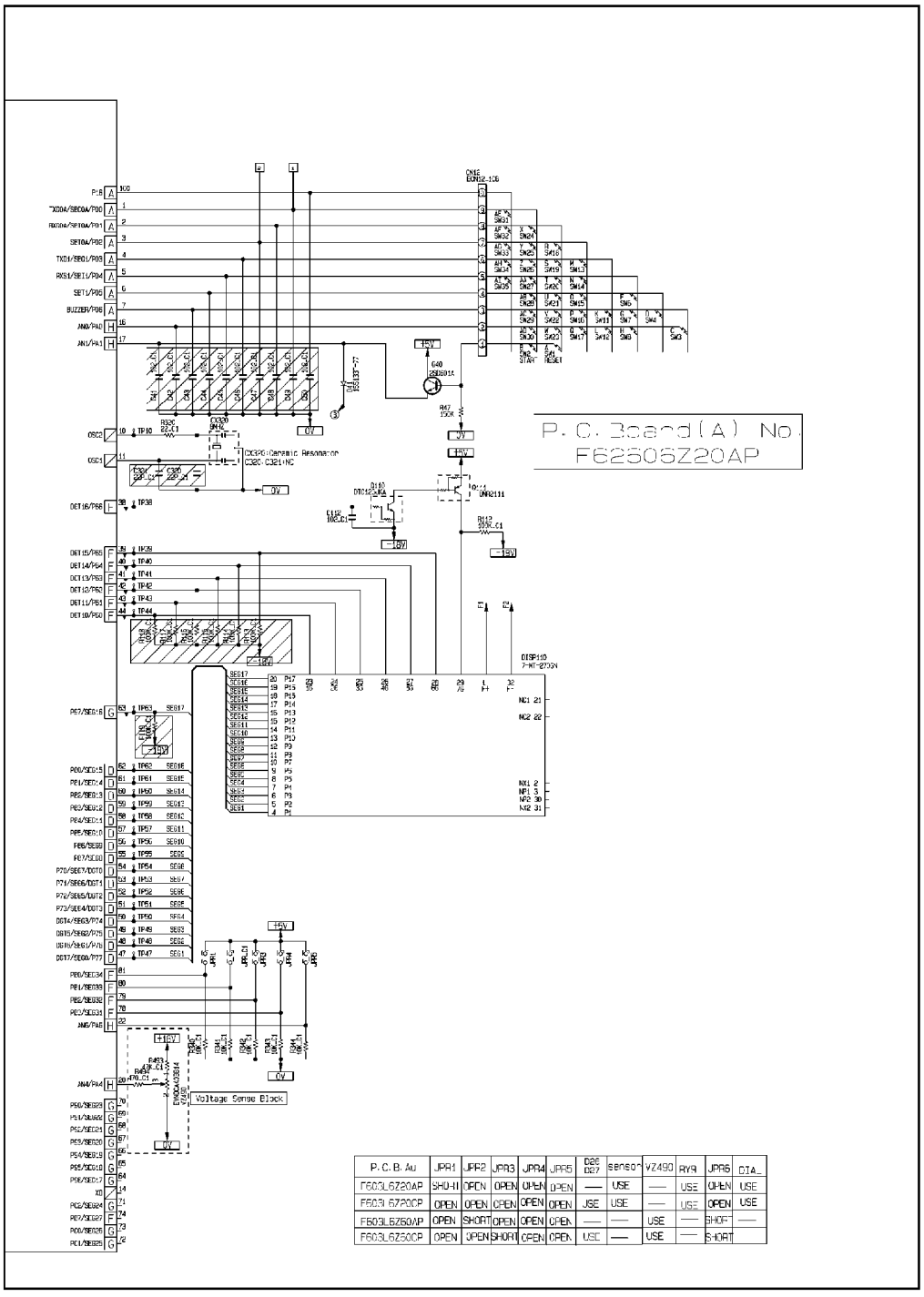
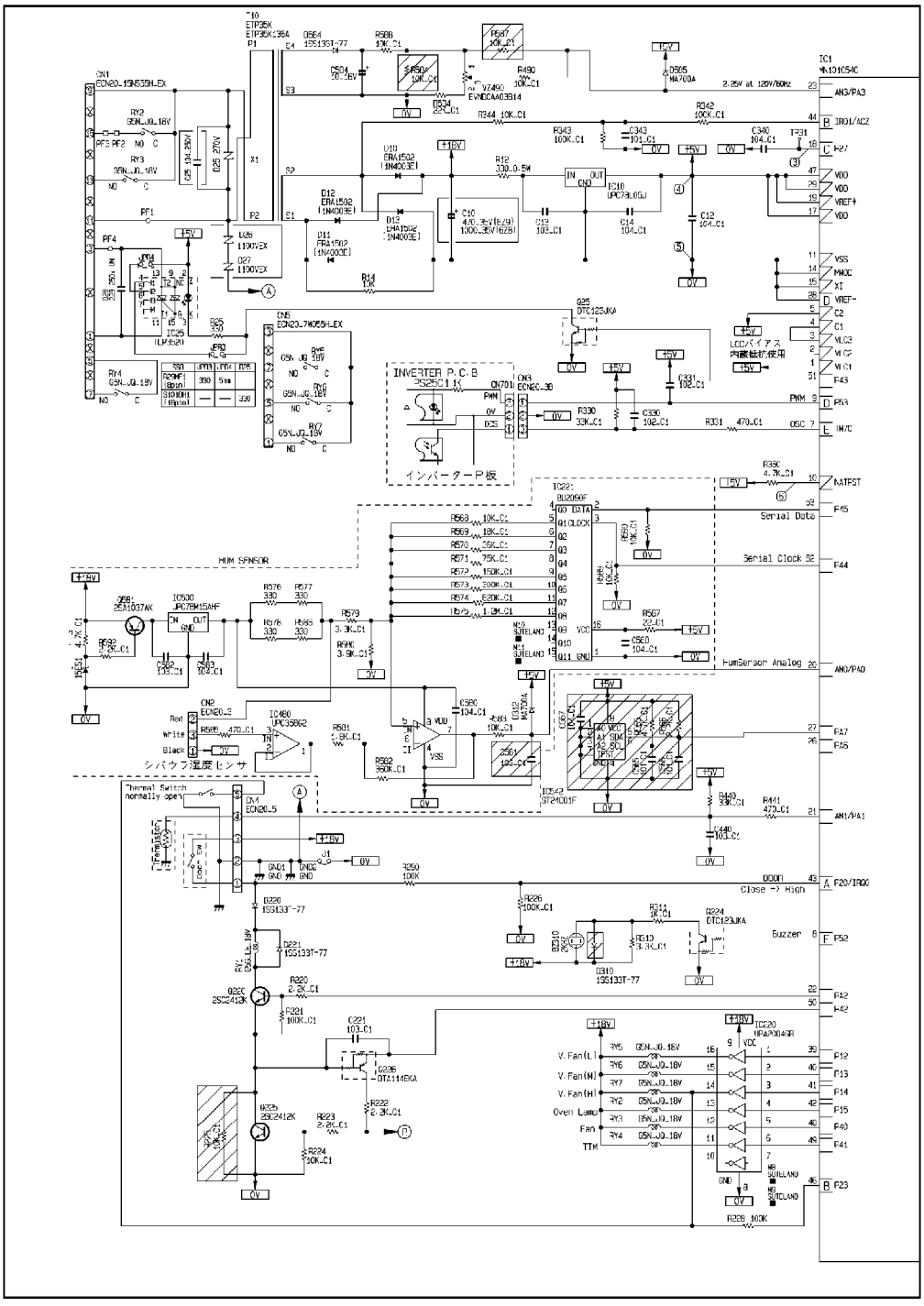
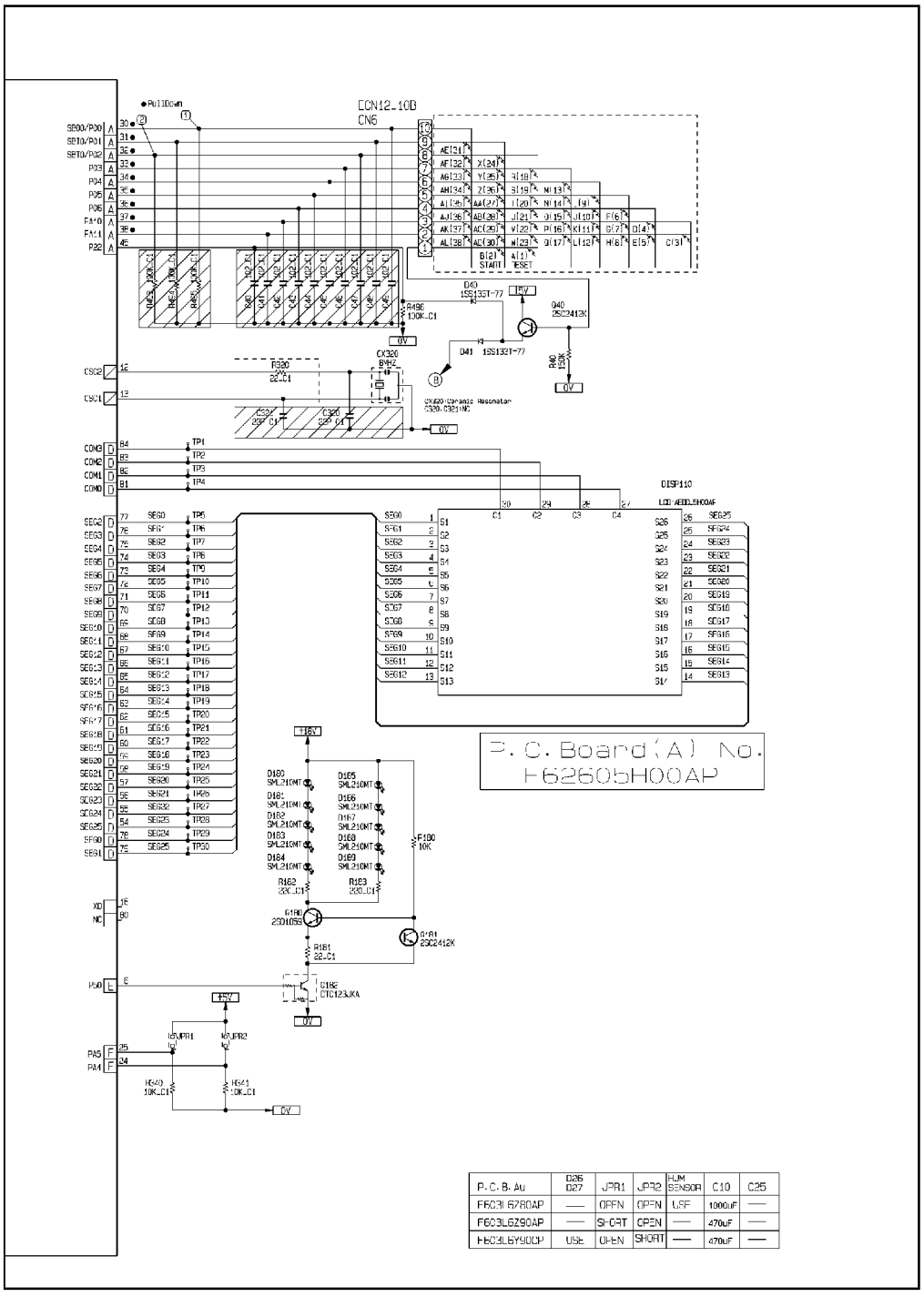
M99 SUTELAND
M100 SUTELAND



P. C. B. No	JPR1	JPR2	JPR3	JPR4	JPR5	D26 D27	sensor	VZ490	RY9	JPR6	DTA_
F603L6Z20AP	SHORT	OPEN	OPEN	OPEN	OPEN	—	USE	—	USE	OPEN	USE
F603L67Z0CP	OPEN	OPEN	OPEN	OPEN	OPEN	USE	USE	—	USE	OPEN	USE
F603L6Z60AP	OPEN	SHORT	OPEN	OPEN	OPEN	—	—	USE	—	SHORT	—
F603L6Z50CP	OPEN	OPEN	SHORT	OPEN	OPEN	USE	—	USE	—	SHORT	

7.3. NN-S245 CPH, H264*FR APH, S254*FR APH


INVERTER P.C.B
インバーターPCB
HUM SENSOR
シバウラ温度センサ
Thermal Switch
normally open
Serial Data
Serial Clock
HumSensor Analog
Close => High
Buzzer
V. Fan(L)
V. Fan(M)
V. Fan(H)
Oven Lamp
Fan
TTM
LCDバイアス
内蔵抵抗使用



P.C.B.Au	D26 D27	JPR1	JPR2	HUM SENSOR	C10	C25
F603I 6780AP	—	OPEN	OPEN	USE	1000uF	—
F603L6Z90AP	—	SHORT	OPEN	—	470uF	—
F603L6Y90CP	USE	OPEN	SHORT	—	470uF	—

7.4. PARTS LIST

7.4.1. NN-P295 APH/CPH, S255 APH/CPH

Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
BZ210		AEFBAT2001WQ	BUZZER	1	2.0KHz
C111		ECQV1H474JL2	METAL FILM CAPACITOR	1	0.47 μ F/50V
C350		F1H1H101A894	CHIP CAPACITOR	1	100PF/50V
C112,C330,C331		F1H1H102A896	CHIP CAPACITOR	3	1000PF/50V
C12,C14,C16,C220,C440		F1H1H103A897	CHIP CAPACITOR	5	0.01 μ F/50V
C500		F1H1H103A897	CHIP CAPACITOR	1	0.01 μ F/50V (P295 APH/CPH)
C17,C40,C223,C351		F1H1E104A108	CHIP CAPACITOR	4	0.1 μ F/25V
C501,C502		F1H1E104A108	CHIP CAPACITOR	2	0.1 μ F/25V (P295 APH/CPH)
C10		AECETK1V102B	AL CHEM CAPACITOR	1	1000 μ F/35V
C13		AECETS1C220B	AL CHEM CAPACITOR	1	22 μ F/16V
C110		ECEA1EKS101I	AL CHEM CAPACITOR	1	100 μ F/25V
CN1		K1KA08AA0115	CONNECTOR	1	15Pin
CN2		K1KA03AA0086	CONNECTOR	1	3Pin (P295 APH/CPH)
CN3		K1KA03AA0090	CONNECTOR	1	3Pin
CN4		K1KA05AA0086	CONNECTOR	1	5Pin
CN5		K1KA06AA0122	CONNECTOR	1	11Pin
CN9		K1KA03AA0087	CONNECTOR	1	3Pin (P295 APH/CPH)
CN10		K1MN25B00046	CONNECTOR	1	25Pin (P295 APH/CPH)
CN11		K1MN25A00014	CONNECTOR	1	25Pin (P295 APH/CPH)
CN12		K1MN10AA0040	CONNECTOR	1	10Pin (S255 APH/CPH)
CX320		EFOEC8004A4	CERAMIC RESONATOR	1	8MHz
IC1		MN101C88GDA	L.S.I.	1	
IC10		C0CAADG00060	IC	1	
IC25		B3PAC0000060	IC	1	
IC220		B1HBGFF00007	IC	1	
IC350		C0EBH0000264	IC	1	
IC500		C0CAALG00023	IC	1	(P295 APH/CPH)
IC501		C0AABA000051	IC	1	(P295 APH/CPH)
		A2BB00000150	DISPLAY	1	
		F66176Z00AP	DISPLAY HOLDER	1	
Q220,Q223		2SD0601A0L	CHIP TRANSISTOR	2	
Q40		2SD0601A0L	CHIP TRANSISTOR	1	(S255 APH/CPH)
Q113		2SD0602ARL	CHIP TRANSISTOR	1	
Q500		2SB0709A0L	CHIP TRANSISTOR	1	(P295 APH/CPH)
Q112		2SB0710ARL	CHIP TRANSISTOR	1	
Q25,Q110,Q210		B1GBCFEL0002	CHIP DIGI-TRANSISTOR	3	
Q224		B1GBCFEL0002	CHIP DIGI-TRANSISTOR	1	(P295 APH/CPH)
Q111,Q115,Q222,Q226,Q228		UNR211100L	CHIP DIGI-TRANSISTOR	5	
Q114		UNR221100L	CHIP DIGI-TRANSISTOR	1	
D41,D220,D221,D223		B0AACK000004	DIODE	4	
D222		B0AACK000004	DIODE	1	(P295 APH/CPH)
D10-D13,D110,D111		AESSRCT1A6-E	DIODE	6	
D500,D502		AEDNRB721Q	DIODE	2	(P295 APH/CPH)
D25		AERZ271KSBN	VARISTOR	1	270V
D26,D27		AERZ102KSBN	VARISTOR	2	1000V (CPH)
R16		D0AE103JA097	CARBON FILM RESISTOR	1	10K Ω ,1/4W,5%
R220		D0AE104J0001	CARBON FILM RESISTOR	1	100K Ω ,1/4W,5%
R47		AERDY2TJ154T	CARBON FILM RESISTOR	1	150K Ω ,1/4W,5% (S255 APH/CPH)
R25		D0AE331J0001	CARBON FILM RESISTOR	1	330 Ω ,1/4W,5%
R125,R126		D0AE151J0002	CARBON FILM RESISTOR	2	150 Ω ,1/4W,5%

Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
R501-R504		D1AC3300A063	METAL FILM RESISTOR	4	330 Ω ,1/4W,1% (P295 APH/CPH)
ZD110		B0BA3R500006	ZENER DIODE	1	
ZD220		AESZMTZJ120B	ZENER DIODE	1	
ZD500		B0BA01400009	ZENER DIODE	1	(P295 APH/CPH)
RY1		K6B1AZA00005	POWER RELAY	1	18V
RY2-RY7		K6B1AZA00011	POWER RELAY	6	
RY8		K6B1AZA00011	POWER RELAY	1	(P295 APH/CPH)
RY9		K6B1CZA00004	POWER RELAY	1	(P295 APH/CPH)
T10		G4C4AAD00006	LOW VOLTAGE TRANSFORMER	1	120V
SW1-SW4,SW6-SW8,SW11-SW35		EUQ11L05R	SWITCH	32	(P295 APH/CPH)
VZ490		D3BB6103A006	VARISTOR	1	10K Ω VR (S255 APH/CPH)

7.4.2. NN-H275 APH/CPH

Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
BZ210		AEFBAT2001WQ	BUZZER	1	2.0KHz
C111		ECQV1H474JL2	METAL FILM CAPACITOR	1	0.47 μ F/50V
C350		F1H1H101A894	CHIP CAPACITOR	1	100PF/50V
C112,C330,C331		F1H1H102A896	CHIP CAPACITOR	3	1000PF/50V
C12,C14,C16,C80,C81,C220, / C440,C500		F1H1H103A897	CHIP CAPACITOR	8	0.01 μ F/50V
C17,C40,C223,C351,C501,C502		F1H1E104A108	CHIP CAPACITOR	6	0.1 μ F/25V
C15		AECUU08F474Z	CHIP CAPACITOR	1	0.47 μ F/50V (CPH)
C10		AECETK1V102B	AL CHEM CAPACITOR	1	1000 μ F/35V
C13		AECETS1C220B	AL CHEM CAPACITOR	1	22 μ F/16V
C110		ECEA1EKS101I	AL CHEM CAPACITOR	1	100 μ F/25V
CN1		K1KA08AA0115	CONNECTOR	1	15Pin
CN2,CN11		K1KA03AA0086	CONNECTOR	2	3Pin
CN3		K1KA03AA0090	CONNECTOR	1	3Pin
CN4		K1KA05AA0086	CONNECTOR	1	5Pin
CN5		K1KA06AA0122	CONNECTOR	1	11Pin
CN10		F03525E30XN	INV.HARNESS	1	
CN12		K1MN10AA0040	CONNECTOR	1	10Pin
CX320		EFOEC8004A4	CERAMIC RESONATOR	1	8MHz
IC1		MN101C88GDB1	L.S.I.	1	
IC10		C0CAADG00060	IC	1	
IC25		B3PAC0000060	IC	1	
IC220		B1HBGFF00007	IC	1	
IC350		C0EBH0000264	IC	1	
IC500		C0CAALG00023	IC	1	
IC501		C0AABA000051	IC	1	
DISP110		A2BB00000150	DISPLAY	1	
		F66176Z00AP	DISPLAY HOLDER	1	
Q40,Q220,Q223		2SD0601A0L	CHIP TRANSISTOR	3	
Q113		2SD0602ARL	CHIP TRANSISTOR	1	
Q112		2SB0710ARL	CHIP TRANSISTOR	1	
Q500		2SB0709A0L	CHIP TRANSISTOR	1	
Q25,Q110,Q210,Q224		B1GBCFEL0002	CHIP DIGI-TRANSISTOR	4	
Q111,Q115,Q222,Q226,Q228		UNR211100L	CHIP DIGI-TRANSISTOR	5	

Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
Q114		UNR221100L	CHIP DIGI-TRANSISTOR	1	
D41,D220-D223		B0AACK000004	DIODE	5	
D10-D13,D110,D111		AESSRCT1A6-E	DIODE	6	
D500,D502		AEDNRB721Q	DIODE	2	
D25		AERZ271KSBN	VARISTOR	1	270V
D26,D27		AERZ102KSBN	VARISTOR	2	1000V (CPH)
R120		AERJ06JR00R	CHIP RESISTOR	1	0 Ω ,1/10W,5%
R80,R81,R211,R354		AERJ06J102R	CHIP RESISTOR	4	1K Ω ,1/10W,5%
R22,R82,R83,R230,R340-R344, R350,R508,R519		AERJ06J103R	CHIP RESISTOR	12	10K Ω ,1/10W,5%
R14,R112-R119,R221,R223, / R351,R352		AERJ06J104R	CHIP RESISTOR	13	100 Ω ,1/10W,5%
R515		AERJ06J125R	CHIP RESISTOR	1	1.2M Ω ,1/10W,5%
R121,R122		AERJ06J151R	CHIP RESISTOR	2	150 Ω ,1/10W,5%
R124,R509		AERJ06J183R	CHIP RESISTOR	2	18K Ω ,1/10W,5%
R320		AERJ06J220R	CHIP RESISTOR	1	22 Ω ,1/10W,5%
R127,R222,R228,R229,R353,R500		AERJ06J222R	CHIP RESISTOR	6	2.2K Ω ,1/10W,5%
R513		AERJ06J304R	CHIP RESISTOR	1	300K Ω ,1/10W,5%
R210,R506		AERJ06J332R	CHIP RESISTOR	2	3.3K Ω ,1/10W,5%
R231,R330,R440		AERJ06J333R	CHIP RESISTOR	3	33K Ω ,1/10W,5%
R510		AERJ06J363R	CHIP RESISTOR	1	36K Ω ,1/10W,5%
R232,R331,R441,R516		AERJ06J471R	CHIP RESISTOR	4	470 Ω ,1/10W,5%
R123,R128,R505		AERJ06J472R	CHIP RESISTOR	3	4.7K Ω ,1/10W,5%
R16		D0AE103JA097	CARBON FILM RESISTOR	1	10K Ω ,1/4W,5%
R220		D0AE104J0001	CARBON FILM RESISTOR	1	100K Ω ,1/4W,5%
R47		AERDY2TJ154T	CARBON FILM RESISTOR	1	150K Ω ,1/4W,5%
R25		D0AE331J0001	CARBON FILM RESISTOR	1	330 Ω ,1/4W,5%
R125,R126		D0AE151J0002	CARBON FILM RESISTOR	2	150 Ω ,1/4W,5%
R501-R504		D1AC3300A063	METAL FILM RESISTOR	4	330 Ω ,1/4W,1%
ZD110		B0BA3R500006	ZENER DIODE	1	
ZD220		AESZMTZJ120B	ZENER DIODE	1	
ZD500		B0BA01400009	ZENER DIODE	1	15VB
RY1		K6B1AZA00005	POWER RELAY	1	18V
RY2-RY7		K6B1AZA00011	POWER RELAY	6	
RY9		K6B1CZA00004	POWER RELAY	1	
T10		G4C4AAD00006	LOW VOLTAGE TRANSFORMER	1	120V
RE80		EVEJ1HF2224B	REVOLVING ENCODER	1	

7.4.3. NN-S245 CPH, H264*FR APH, S254*FR APH

Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
BZ310		AEFBAT2001WQ	BUZZER	1	2.0KHz
C343		F1H1H101A894	CHIP CAPACITOR	1	100PF/50V
C330,C331		F1H1H102A896	CHIP CAPACITOR	2	1000PF/50V
C13,C221,C440		F1H1H103A897	CHIP CAPACITOR	3	0.01 μ F/50V
C582		F1H1H103A897	CHIP CAPACITOR	1	0.01 μ F/50V(H264*R APH)
C12,C14,C340		F1H1E104A108	CHIP CAPACITOR	3	0.1 μ F/25V
C568,C580,C583		F1H1E104A108	CHIP CAPACITOR	3	0.1 μ F/25V(H264*R APH)
C10		AECETK1V471B	AL CHEM CAPACITOR	1	470 μ F/35V (S245 CPH,S254*FR APH)
C10		AECETK102B	AL CHEM CAPACITOR	1	1000 μ F/35V (H264*R APH)
C584		AECETS1C100B	AL CHEM CAPACITOR	1	10 μ F/16V
CN1		K1KA08AA0115	CONNECTOR	1	15Pin
CN2		K1KA03AA0086	CONNECTOR	1	3Pin (H264*R APH)
CN3		K1KA03AA0090	CONNECTOR	1	3Pin
CN4		K1KA05AA0086	CONNECTOR	1	5Pin
CN5		K1KA04AA0108	CONNECTOR	1	7Pin
CN6		K1MN10AA0040	CONNECTOR	1	10Pin
CX320		EFOEC8004A4	CERAMIC RESONATOR	1	8MHz
IC1		MN101C54CGC	L.S.I	1	
IC10		AEIC78L05J-T	IC	1	
IC25		AEICR29MF1	IC	1	
IC220		B1HBGFF00007	IC	1	
IC221		AEICBU2090F	IC	1	(H264*R APH)
IC480		C0AABA000051	IC	1	(H264*R APH)
IC500		AEIC78M15AHF	IC	1	(H264*R APH)
DISP110		AEDDHJ5H00AP	LCD	1	
		F66175E40XN	DISPLAY HOLDER	1	
		F67525E40XN	DIFFUSION SHEET	1	
Q180		B1BAAJ000003	TRANSISTOR	1	
Q40,Q181,Q220,Q225		B1ABCF000010	CHIP TRANSISTOR	4	
Q581		B1ADCF000003	CHIP TRANSISTOR	1	(H264*R APH)
Q25,Q182,Q224		B1GBCFEL0002	CHIP DIGI-TRANSISTOR	3	
Q226		B1GDCFJJ0002	CHIP DIGI-TRANSISTOR	1	
D180-D189		AESQPY1112H	CHIP-LED	10	
D40,D41,D220,D221,D584		B0AACK000004	DIODE	5	
D10-D13		AESSRCT1A6-E	DIODE	4	
D585		AEDNRB721Q	DIODE	1	
D312		AEDNRB721Q	DIODE	1	(H264*R APH)
D25		AERZ271KSBN	VARISTOR	1	270V
D26,D27		AERZ102KSBN	VARISTOR	2	1000V (CPH)
D28		AER241KD07A	VARISTOR	1	240V
R311		AERJ06J102R	CHIP RESISTOR	1	1K Ω,1/10W,5%
R224,R340,R341,R344,R490,R588		AERJ06J103R	CHIP RESISTOR	6	10K Ω,1/10W,5%
R568,R583,R589,R590		AERJ06J103R	CHIP RESISTOR	4	10K Ω,1/10W,5%(H264*R APH)
R221,R226,R342,R343,R496		AERJ06J104R	CHIP RESISTOR	5	100 Ω,1/10W,5%
R181,R320		AERJ06J220R	CHIP RESISTOR	2	22 Ω,1/10W,5%
R567		AERJ06J220R	CHIP RESISTOR	1	22 Ω,1/10W,5% (H264*R APH)
R182,R183		AERJ06J221R	CHIP RESISTOR	2	220 Ω,1/10W,5%
R220,R222,R223		AERJ06J222R	CHIP RESISTOR	3	2.2K Ω,1/10W,5%
R330,R440		AERJ06J333R	CHIP RESISTOR	2	33K Ω,1/10W,5%

Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
R570		AERJ06J363R	CHIP RESISTOR	1	36K Ω,1/10W,5% (H264*R APH)
R582		AERJ06J364R	CHIP RESISTOR	1	360K Ω,1/10W,5% (H264*R APH)
R580		AERJ06J392R	CHIP RESISTOR	1	3.9K Ω,1/10W,5% (H264*R APH)
R331,R441		AERJ06J471R	CHIP RESISTOR	2	470 Ω,1/10W,5%
R593		AERJ06J472R	CHIP RESISTOR	1	4.7K Ω,1/10W,5% (H264*R APH)
R592		AERJ06J473R	CHIP RESISTOR	1	47K Ω,1/10W,5% (H264*R APH)
R574		AERJ06J624R	CHIP RESISTOR	1	620K Ω,1/10W,5% (H264*R APH)
R571		AERJ06J753R	CHIP RESISTOR	1	75K Ω,1/10W,5% (H264*R APH)
R14,R180		D0AE103JA097	CARBON FILM RESISTOR	2	10K Ω,1/4W,5%
R228,R290		D0AE104J0001	CARBON FILM RESISTOR	2	100K Ω,1/4W,5% (H264*R APH)
R40		AERDY2TJ154T	CARBON FILM RESISTOR	1	150K Ω,1/4W,5%
R12		D0AE331J0001	CARBON FILM RESISTOR	1	330 Ω,1/4W,5%
R576-R578,R586		AEROY2F3300T	METAL FILM RESISTOR	4	330 Ω,1/4W,5% (H264*R APH)
ZD12		B0BA01400009	ZENER DIODE	1	(H264*R APH)
RY1		K6B1AZA00005	POWER RELAY	1	18V
RY2-RY7		K6B1AZA00011	POWER RELAY	6	
T10		AETP35K136A	LOW VOLTAGE TRANSFORMER	1	
VZ490		D3BB6103A006	VARISTOR	1	10K Ω

03/05 / S-6Y9, S-6Z0 / S-6Z2, S-6Z3 / S-6Z6, S-6Z8 / S-6Z9 / Printed in China

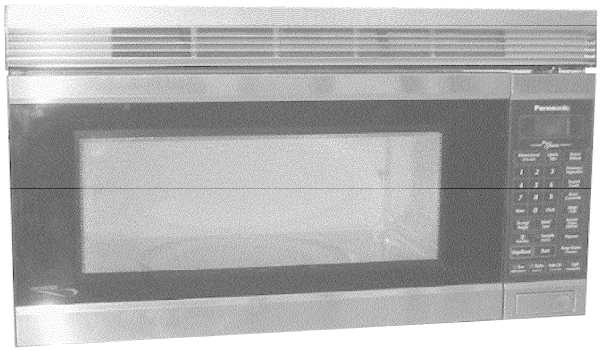
ORDER NO.SIMMC 0203005C1
E2

Service Manual

Microwave Oven

NN-S262SF / NN-S262BF / NN-S262WF / NN-S252BF / NN-S252WF

APH(USA)
CPH(CANADA)



SPECIFICATIONS

Specifications for APH:

Specifications: / Model:	NN-S262SF APH	NN-S262BF/WF APH	NN-S252BF/WF APH
Power Source:	120V AC Single Phase, 60Hz		
Power Requirement:	1430W	1430W	1430W
Output(IEC705-88):	1200W	1200W	1200W
Microwave Frequency:	*2450MHz		
Timer:	*99 min. 99 sec.		
Outside Dimensions:	*29 7/8"(759mm)(W) x 15"(381mm)(D) x 16 7/16"(418mm)(H)		
Oven Cavity Dimensions:	*23 1/4"(591mm)(W) x 14 7/16"(367mm)(D) x 9 1/2"(242mm)(H)		
Weight:	*55lbs. (25.0 kg)	*53lbs. (24.0 kg)	*53lbs. (24.0 kg)
PbF	This product with PbF		
Output power: IEC705-88 Test Procedure			
Specifications subject to change without notice.			

Specifications for CPH:

Specifications: / Model:	NN-S262SF CPH	NN-S262BF/WF CPH	NN-S252BF/WF CPH
Power Source:	120V AC Single Phase, 60Hz		
Power Requirement:	1430W	1430W	1430W
Output(IEC705-88):	1100W	1100W	1100W
Microwave Frequency:	*2450MHz		
Timer:	*99 min. 99 sec.		
Outside Dimensions:	*29 7/8"(759mm)(W) x 15"(381mm)(D) x 16 7/16"(418mm)(H)		
Oven Cavity Dimensions:	*23 1/4"(591mm)(W) x 14 7/16"(367mm)(D) x 9 1/2"(242mm)(H)		
Weight:	*55lbs. (25.0 kg)	*53lbs. (24.0 kg)	*53lbs. (24.0 kg)
PbF	This product with PbF		
Output power: IEC705-88 Test Procedure			
Specifications subject to change without notice.			

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⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

WARNING

1. This product should be serviced only by trained, qualified personnel.
2. Though this product has been manufactured in compliance with:
   "Federal Performance Standard 21 CFR Subchapter J"(D.H.H.S): U.S.A. models
   or "Radiation Emitting Devices Act"(Health and Welfare Canada): Canadian models
   it is very important all repairs should be made in accordance with procedures described in this manual to avoid being exposed to excessive microwave radiation.
3. Check for radiation leakage before and after every servicing according to the "procedure for measuring radiation leakage."
4. If the unit cannot be repaired on site, advise the customer not to use until unit is repaired.
5. Any serviceman who learns of any accident pertaining to microwave radiation leakage including the oven operating with open door should immediately notify the appropriate address listed below and Center for Devices and Radiological Health, DHHS.

IN U.S.A. (PASC)	Panasonic Services Company 50 Meadowland Parkway, Secaucus, New Jersey 07094 Attention: Technical Service Division. (201)348-7000	IN PUERTO RICO (PSC)	PSC San Gabriel Industrial Park 65th Infantry Ave. Km.9.5 Carolina, Puerto Rico 00985 (787)750-4300
		IN CANADA (PCI)	Panasonic Canada Inc. 5770 Ambler Drive, Mississauga, Ontario, L4W2T3 (905)624-5010

6. There are special components used in the microwave oven which are important for safety. These parts are marked with a ⚠ on the replacement parts list. It is essential that these critical parts be replaced only with the manufacture's specified parts to prevent microwave leakage, shock, fire, or other hazards. Do not modify the orginal design.

PRECAUTIONS TO BE OBSERVED BEFORE AND DURING SERVICING TO AVOID POSSIBLE EXPOSURE TO EXCESSIVE MICROWAVE ENERGY

(A) Do not operate or allow the oven to be operated with the door open.

(B) Make the following safety checks on all ovens to be serviced before activating the magnetron or other microwave source, and make repairs as necessary:
   (1) Interlock operation
   (2) Proper door closing
   (3) Seal and sealing surfaces (arcing, wear, and other damage)
   (4) Damage to or loosening of hinges and latches.
   (5) Evidence of dropping or abuse

(C) Before turning on microwave power for any service test or inspection within the microwave generating compartments, check the magnetron, waveguide or transmission line, and cavity for proper alignment, integrity and connections.

(D) Any defective or misadjusted components in the interlock, monitor, door seal, and microwave generation and transmission systems shall be repaired, replaced, or adjusted by procedures described in this manual before the oven is released to the owner.

(E) A microwave leakage check to verify compliance with the Federal Performance Standard should be performed on each oven prior to release to the owner.

CAUTION

About lead free solder (PbF)

Distinction of PbF PCB: PCBs (manufactured) using lead free solder will have a PbF stamp on the PCB.

Caution:
- Pb free solder has a higher melting point than standard solder; Typically the melting point is 50-70˚F(30 - 40˚C) higher. Please use a high temperature soldering iron. In case of the soldering iron with temperature control, please set it to 700± 20˚F (370 ± 10˚C).
- Pb free solder will tend to splash when heated too high (about 1100˚F/600˚C).

Panasonic®

DANGER OF HIGH VOLTAGE AND HIGH TEMPERATURE (HOT/LIVE) OF THE INVERTER POWER SUPPLY (U)

INVERTER WARNING

This Inverter board looks like a regular PCB. However, this PCB drives the magnetron tube with extremely high voltage and high current. NEW H.V.

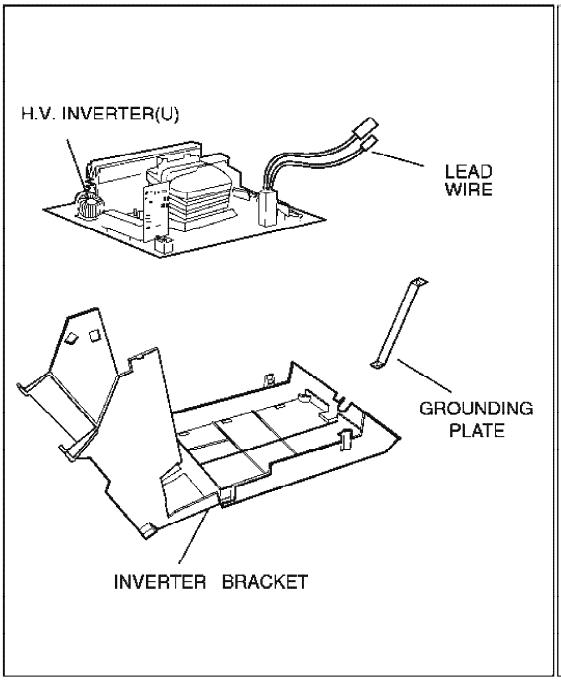
IT HAS: 1. **Very high voltage and high current circuits.**
It functions the same as the high voltage transformer and high voltage capacitor in ordinary microwave ovens.

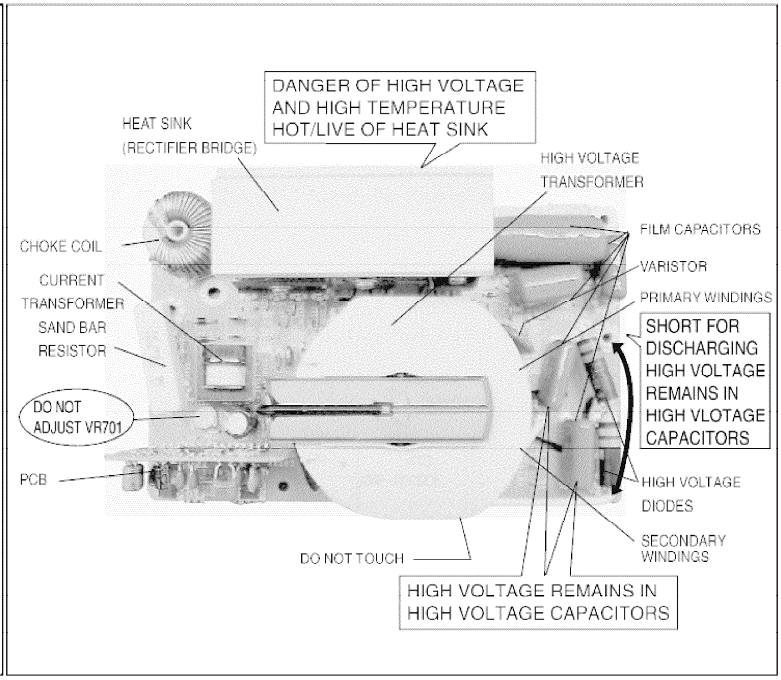
2. **Aluminum heat sink is energized with very high voltages and high heat energy.**
3. **Very high voltage may remain in circuitry even when oven is off. High voltage may remain in the capacitors on the board.**

DO NOT:

* 1. **Do not touch circuitry because it has very hot (high voltage) circuitry. Even when replacing board, extreme care should be taken to avoid possible electric shock hazards. High voltage may remain in circuit.**
* 2. **Do not touch aluminum heat sink because it is very hot in high voltage and also very hot in high heat energy.**
* 3. **Do not try to adjust or tamper with preset volume on the Inverter board because it is very dangerous to adjust without proper test equipment.**
* 4. **Do not test oven while Inverter grounding plate or screws are loose. It is very dangerous to operate H.V. Inverter Circuit (U) with loose mounting screws or if improperly grounded.**
* 5. **For USA only:**
Do not try to repair Inverter PCB because it is very dangerous to repair it. Replace as whole High Voltage Inverter Circuit unit and return fully re-packed with original shipping box and shipping materials.

INVERTER POWER SUPPLY



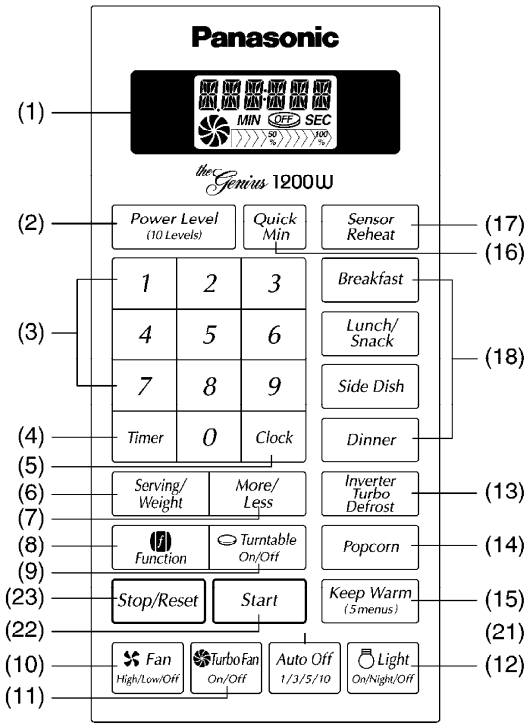


1. FEATURE CHART

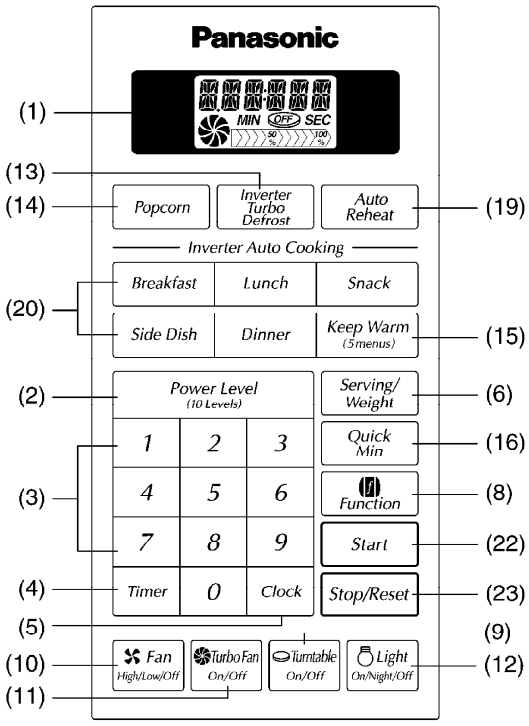
MODEL / FEATURE	NN-S262	NN-S252
Five Stage Cooking	O	O
Inverter Turbo Defrost	O	O
Sensor Reheat	O	-
Sensor Cooking	O	-
Auto Reheat	-	O
Inverter Auto Cooking	-	O
Quick Min	O	O
Popcorn	O	O
Digital Clock	O	O
Timer	O	O
Child Safety Lock	O	O
Vent Fan	O	O
Cooktop Light	O	O

2. CONTROL PANEL (APH)

NN-S262



NN-S252



(1) Display Window
(2) Power Level Pad
(3) Number Pads
(4) Timer Pad
(5) Clock Pad
(6) Serving/Weight Pad
(7) More/Less Pad
(8) Function Pad
(9) Turntable On/Off Pad
(10) Fan High/Low/Off Pad
(11) Turbo Fan On/Off Pad
(12) Light On/Night/Off Pad
(13) Inverter Turbo Defrost Pad
(14) Popcorn Pad
(15) Keep Warm Pad
(16) Quick Min Pad
(17) Sensor Reheat Pad
(18) Sensor Cooking Pads
(19) Auto Reheat Pad
(20) Inverter Auto Cooking Pads
(21) Auto Off Pad

(22) Start Pad

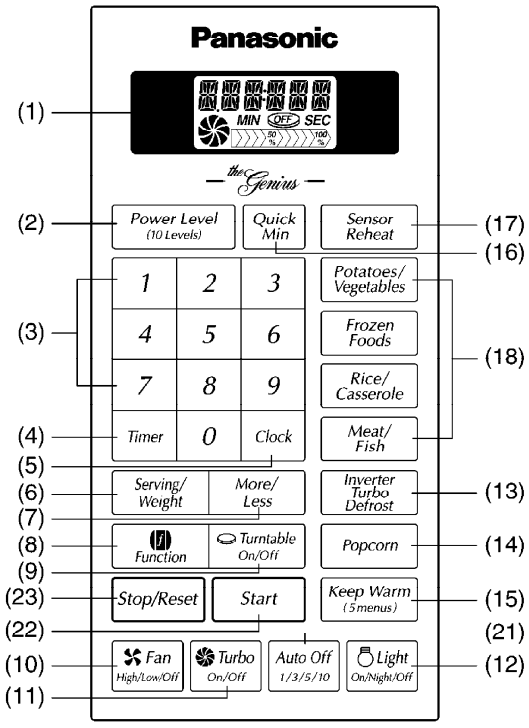
One tap allows oven to begin functioning. If door is opened or STOP/RESET Pad is pressed once during oven operation, START Pad must again be pressed to restart oven.

(23) Stop/Reset Pad

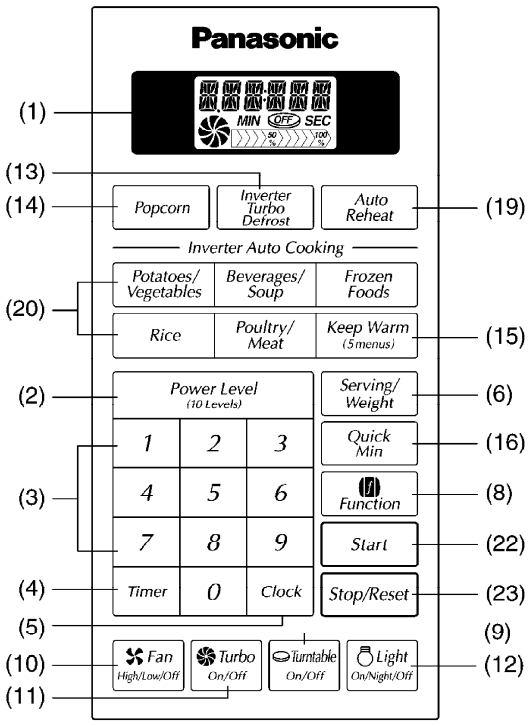
Before cooking: One tap clears your instructions.
During cooking: One tap temporarily stops the cooking process. Another tap cancels all your instructions and time of day or colon appears on the display window.

3. CONTROL PANEL (CPH)

NN-S262



NN-S252



(1) Display Window
(2) Power Level Pad
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One tap allows oven to begin functioning. If door is opened or STOP/RESET Pad is pressed once during oven operation, START Pad must again be pressed to restart oven.

(23) Stop/Reset Pad

Before cooking: One tap clears your instructions.
During cooking: One tap temporarily stops the cooking process. Another tap cancels all your instructions and time of day or colon appears on the display window.

4. OPERATION AND DIGITAL PROGRAMMER CIRCUIT TEST PROCEDURE

4.1. To set clock

OPERATION	SCROLL DISPLAY
1. Plug the power supply cord into wall outlet.	BEFORE USE REFER TO OPERATING INSTRUCTIONS
2. Press [Clock] pad.	☼ ☼
3. Enter time of day (TOD) by pressing appropriate [Number] pads.	11 ☼ 25
4. Press [Clock] pad. TOD has now been resistered into the digital programmer circuit and will count up by minutes.	11 : 25

4.2. Time cooking for two stage

OPERATION	SCROLL DISPLAY
1. Place a water load in the oven.	
2. Press [Power Level] pad once to set High power. (1st stage)	P 10
3. Set for 5 seconds by pressing [Number] pads. 5 sec.= [5]	5 SEC
4. Press [Power Level] pad 6 times to set Medium power. (2nd stage)	P 5
5. Set for 1 minute by pressing [Number] pads. 1 Min.= [1] [0] [0]	1 00 MIN SEC

OPERATION	SCROLL DISPLAY
6. Press [Start] pad.	5 SEC
7. When 1st stage cooking time has elapsed. Oven beeps twice and automatically switches to 2nd stage cooking.	1 MIN 0 0 SEC
8. When 2nd stage cooking time has elapsed, oven beeps 5 times and shuts off.	Time of day or colon if set appears in the display

4.3. Inverter turbo defrost

OPERATION	SCROLL DISPLAY
1. Press [Inverter Turbo Defrost] Pad.	INVERTER TURBO DEFROST SET WEIGHT
2. Set the weight for 1 lb by pressing [Number] pads. 1 lb= [1] [0]	1.0 LB
3. Press [Start] pad.	5 MIN 28 SEC
4. Press [Stop/Reset] Pad twice.Oven shuts off.	Time of day or colon if set appears in the display.

4.4. Inverter auto cooking

OPERATION	SCROLL DISPLAY
1. Press [Beverages] pad once.	BEVERAGES PRESS SERVING WEIGHT
2. Press [Serving/Weight] pad twice to select 2 cups	2 CUPS
3. Press [Start] pad.	
When cooking time has elapsed, Oven beeps 5 times and shuts off.	Time of day or colon if set appears in the display.

4.5. Popcorn

OPERATION	SCROLL DISPLAY
1. Press [Popcorn] pad once for 3.5 oz serving. (Select 3.5, 3.0, 2.85, 2.65, 1.75 oz)	
2. Press [Start] pad.	
When cooking time has elapsed, Oven beeps 5 times and shuts off.	Time of day or colon if set appears in the display.

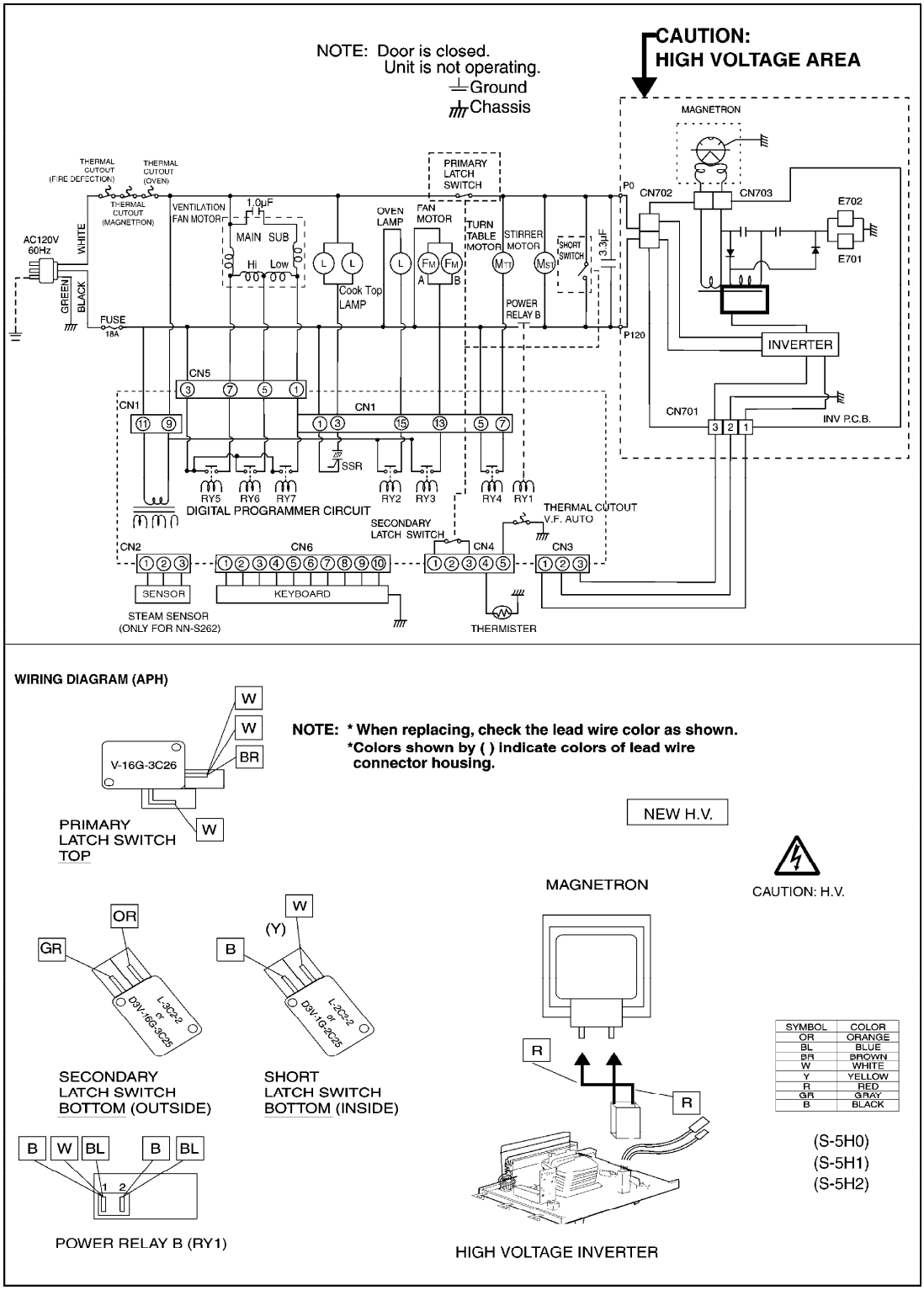
4.6. Auto reheat

OPERATION	SCROLL DISPLAY
1. Press [Auto Reheat] pad twice for two servings.	AUTO REHEAT
2. Press [Start] pad.Auto Reheat cycle begins time counts down.	1 MIN 21 SEC
3.When cooking time has elapsed, Oven beeps 5 times and shuts off.	Time of day or colon if set appears in the display.

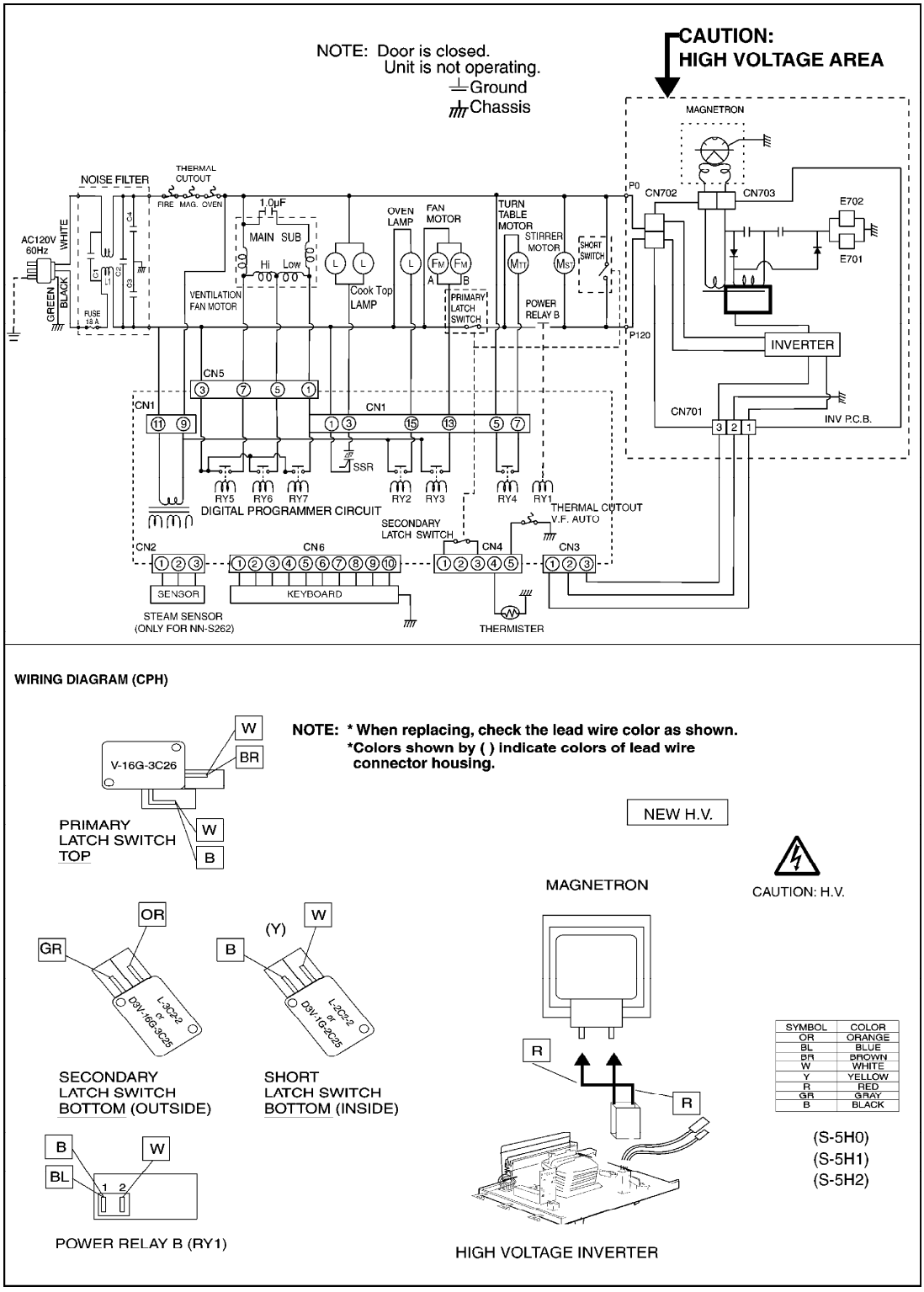
4.7. Power level

Press Power Level	Power Level	Display Window
once	P10 (HIGH)	P10
twice	P9	P9
3 times	P8	P8
4 times	P7 (MED.HIGH)	P7
5 times	P6 (MEDIUM)	P6
6 times	P5	P5
7 times	P4	P4
8 times	P3 (MEDIUM-LOW)	P3
9 times	P2	P2
10 times	P1 (LOW)	P1

5. SCHEMATIC DIAGRAM (APH)



6. SCHEMATIC DIAGRAM (CPH)



7. DESCRIPTION OF OPERATING SEQUENCE

7.1. Variable power cooking control

High Voltage Inverter Power supply (U) controls output power by the signal from Digital Programmer Circuit (DPC). Power relay stays ON for P4 to P10 and For P1 to P3, both inverter drive signal and power relay to control output power.

NOTE:

The ON/OFF time ratio does not correspond with the percentage of microwave power since approximately 2 seconds are required for heating of magnetron filament.

Variable Power Cooking

POWERSETTING		OUTPUT POWER(%)	ON-OFF TIME OF POWER RELAY B (RY1)	
		APPROX.	ON(SEC)	OFF(SEC)
HIGH	P10	100%	22	0
	P9	90%	22	0
	P8	80%	22	0
MEDIUM-HIGH	P7	70%	22	0
MEDIUM	P6	60%	22	0
	P5	50%	22	0
	P4	40%	22	0
MEDIUM-LOW	P3	30%	17	5
	P2	20%	11	11
	P1	10%	6	16
DEFROST	P3	30%	17	5

7.2. Inverter power supply circuit [NEW H.V.]

This Inverter Power Supply Circuit supplies 4,000V DC to the magnetron tube from the line voltage, 120V 60Hz AC input. functions as the H.V. transformer, the H.V.capacitor and H.V.Diode.

1. **The AC input voLtage 120V 60Hz is rectified to DC voltage immediately.**
2. **DC voltage will be supplied to the switching devices called IGBT. These devices will be switched ON-OFF by the 20 to 40 kHz PWM. (pulse width modulation) signal from the microcomputer in the DPC.**
3. **This drives the High voltage transformer to increase up to 2,000V AC and approximately 3V AC by means of transformer.**
4. **Then the half-wave doubler voltage rectifier circuit, consisting of the H.V. diodes and Capacitors, generates the necessary 4,000V DC needed for the magnetron.**
5. **Output power of the magnetron tube is always monitored by the signal output from the current transformer built into the inverter ciruit.**
6. **Then this signal will be fed back to the microcomputer in the DPC to determine operating conditions and output necessary to control PWM signal to the Inverter Power Supply to control output power.**

7.3. Inverter turbo defrost

When this Auto Control feature is selected and the Start Pad is tapped:

1. **The digital programer circuit determines the power level and cooking time to complete cooking and indicates the operating state in the display window. Table shows the corresponding cooking times for respective serving by categories.**
2. **When cooking time the display window has elapsed, the oven tums off automatically by a control signal from the digital programmer circuit.**

Inverter Turbo Defrost

WEIGHT SELECTED	COOKING TIME
1.0LB	5 min.28 sec.

8. CAUTIONS TO BE OBSERVED WHEN TROUBLESHOOTING

Unlike many other appliances, the microwave oven is high-voltage, high-current equipment. Though it is free from danger in ordinary use, extreme care should be taken during repair.

CAUTION
Servicemen should remove their watches whenever working close to or replacing the magnetron.

8.1. Check the grounding

Do not operate on a 2-wire extension cord. The microwave oven is designed to be used when grounded. When it is inoperative, make sure it is grounded properly before beginning repair work.

8.2. Inverter warnings [NEW H.V.]

DANGER OF HIGH VOLTAGE AND HIGH / TEMPERATURE (HOT/LIVE) OF THE INVERTER / POWER SUPPLY (U)

This High Voltage Inverter Power Supply circuit supplies very high voltage and very high current for the magnetron tube. Though it is free from danger in ordinary use, extreme care should be taken during repair. As you can see, it looks like a TV flyback transformer, however the current is extremely large and so danger exists because of its high current and high voltages.

The aluminum heat sink is also energized with high voltage (HOT), so do not touch when AC input terminal is connected to the power line because one of the IGBT switching power devices (Collector) is directly connected to the Aluminum heat sink.

The Aluminum heat sink may be HOT from heat energy; therefore, extreme care should be taken during servicing and replacing.

WARNING OF INVERTER POWER SUPPLY (U) / GROUNDING

Check the High Voltage Inverter Power Supply circuit grounding. This High Voltage Inverter Power Supply circuit board must have a proper chassis ground by the grounding bracket to the chassis ground; otherwise, this H.V. Inverter circuit board will expose very high voltage and cause extreme DANGER! Be sure to have proper grounding by the grounding plate and screws.

WARNING OF DISCHARGING HIGH VOLTAGE CAPACITORS

Warning about the electric charge in the high voltage capacitors. For about 30 seconds after the oven is turned off, an electric charge remains in the high voltage capacitors in the inverter power supply circuit board.

When replacing or checking parts, remove the power plug from the outlet and short the Inverter output terminal of the magnetron filament terminals to the chassis ground with an insulated handle screwdriver to discharge. Please make sure to touch chassis ground side first then short to the output terminals.

WARNING

There is high-voltage present, with high-current capabilities in the circuits of the primary, and secondary windings, choke coil and heat sink of the Inverter. It is extremely dangerous to work on or near these circuits with oven energized.
DO NOT measure the voltage in the high voltage circuit including filament voltage of magnetron.

WARNING

Never touch any circuit wiring with your hand nor with an insulated tool during operation.

8.3. When parts must be replaced, remove the power plug from the outlet.

8.4. When the 18 Amp fuse is blown due to the operation of short switch:

WARNING

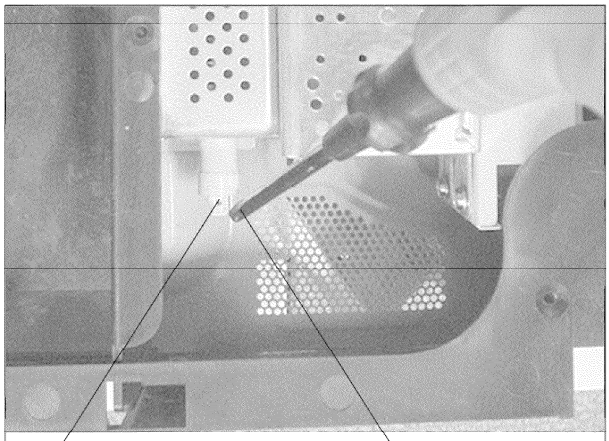
When the 18 Amp. fuse if blown due to the operation of short switch, you must replace Primary latch switch and short switch. Also replace power relay B (RY1) when the continuity check reads shorted contacts (1-2).

1. **This is mandatory. Refer to "Measurements and Adjustments" for these switches.**
2. **When replacing the fuse, confirm that it has the appropriate rating for these models.**
3. **When replacing faulty switches, be sure mounting tabs are not bent, broken or otherwise deficient in their ability to hold the switches.**

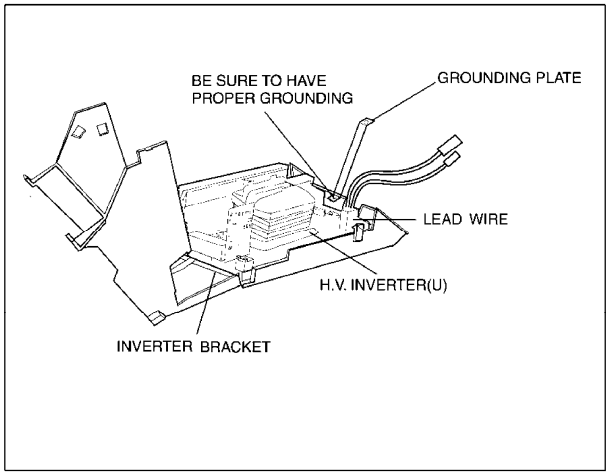
8.5. Avoid inserting nails, wire, etc. through any holes in the unit during operation.

WARNING

Never insert a wire, nail or any other metal object through the lamp holes on the cavity or any other holes or gaps, because such objects may work as an antenna and cause microwave leakage.



Touch chassis side first then short to the terminal of the magnetron filament terminal.



8.6. Confirm after repair

1. **After repair or replacement of parts, make sure that the screws of the oven, etc. are neither loose nor missing. / Microwaves might leak if screws are not properly tightened.**
2. **Make sure that all electrical connections are tight before inserting the plug into the wall outlet.**
3. **Check for microwave energy leakage. (Refer to procedure for measuring microwave energy leakage.)**

CAUTION / MICROWAVE RADIATION

DO NOT BECOME EXPOSED TO RADIATION FROM THE MICROWAVE GENERATOR OR OTHER PARTS CONDUCTING MICROWAVE ENERGY.

IMPORTANT NOTICE [NEW H.V.]

1.The following components have potentials above 2000V while the appliance is operated.

*** Magnetron**

*** High voltage transformer**

*** High voltage diode**

*** High voltage capacitor**

Pay special attention to these components.

2.When the appliance is operated with the door hinge or magnetron fixed incorrectly, the microwave leakage can reach more than 5mW/cm2. After repair or exchange, it is very important to check if magnetron and the door hinge is correctly fixed.

9. DISASSEMBLY AND PARTS REPLACEMENT PROCEDURE

9.1. Magnetron

1. Discharge the high voltage capacitor.

2. Disconnect 2 connectors from fan motor B.

3. Remove 4 screws holing fan motor B (U) assembly.

4. Remove 3 screws which holding exhaust guide (U) onto oven.

5. Tilt exhaust guide (U).

6. Remove 1 screw holding air guide A and then remove air guide A.

7. Remove 2 high voltage lead wires from magnetron filament terminal.

8. Remove 4 screws holding magnetron.

NOTE:

After replacing the magnetron, tighten mounting screws properly making sure there is no gap between the waveguide and the magnetron to prevent microwave leakage.

CAUTION

When replacing the magnetron, be sure the antenna gasket is in place.

9.2. Digital programmer circuit (DPC) and membrane key board.

NOTE:

Be sure to ground any static electric charge built up on your body

before handling the DPC.

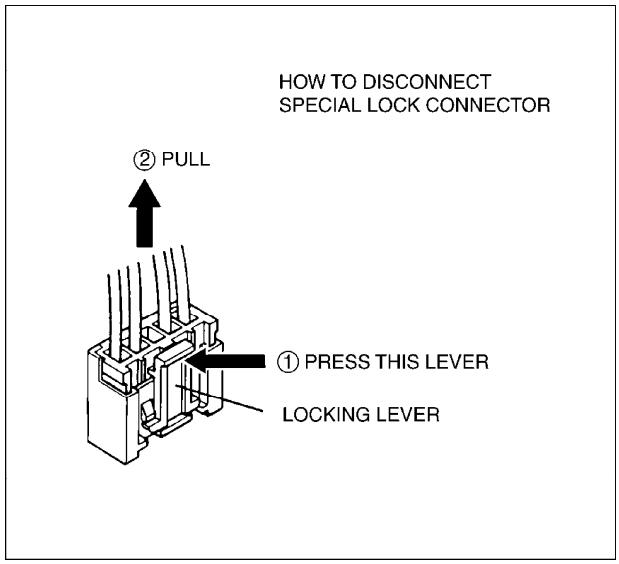
1. **Disconnect all connectors from D.P.C.**
2. **Remove 2 screws holding escutcheon base and slide the escutcheon base upward slightly.**
3. **Release CN6 connector's lock of D.P.C by pushing both levels to inside and pull them upward, and remove flat cable of membrane keyboard.**
4. **Remove 3 screws holding D.P.C.**

To replace membrane key board

5. **Push the upper part of key board (display window portion) from back of escutcheon base and peel off escutcheon sheet and membrane key board completely from escutcheon base.**

NOTE:

1. The membrane key board is attached to the escutcheon base with double faced adhesive tape. Therefore, applying hot air such as using a hair dryer is recommended for smoother removal. / 2. When installing new membrane key board, make sure that the surface of escutcheon base is cleaned sufficiently so that any problems (shorted contacts or uneven surface) can be avoided. / 3. Alignment position of membrane key board is as follows; / Membrane key board: Right and upper edges / Escutcheon sheet: Right and upper edges



9.3. Low voltage transformer and/or power relays (RY1, RY2)

NOTE:

Be sure to ground any static electric charge built up on your body

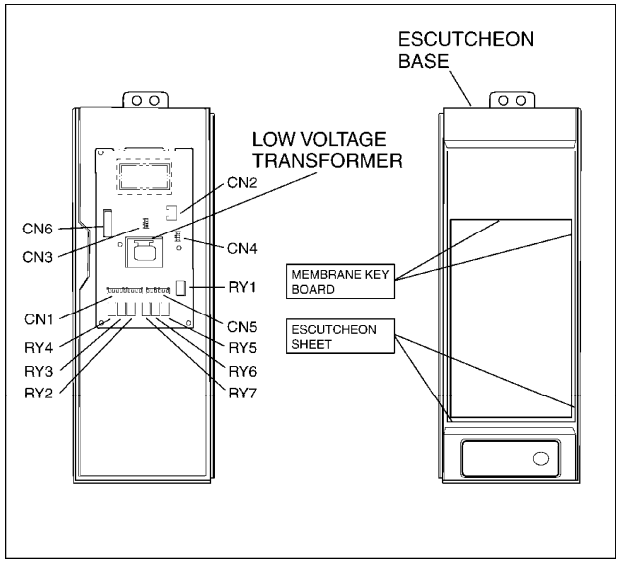
before handling the DPC.

(A) Using solder wick or a desoldering tool and 30W soldering iron, carefully remove all solder from the terminal pins of the low voltage transformer and/or power relays.

NOTE:

Do not use a soldering iron or desoldering tool of more than 30 watts on DPC contacts.

(B) With all the terminal pins cleaned and separated from DPC contacts, remove the defective transformer/power relays making sure all terminal pins are inserted completely. Resolder all terminal contacts carefully.



9.4. Inverter power supply (U)

CAUTIONS WHILE REPLACING INVERTER / POWER SUPPLY (U)

1. Make sure to leave the grounding plate in its place.

2. Make sure to securely tighten grounding screw from the bottom of chasis (base).

3. Securely connect 3 lead wire connectors.

4. Make sure the heat sink has enough space (gap) from the oven. Take special care not to touch any lead wire to the aluminum heat sink because it is hot.

1. Remove 1 screw holding orifice on the cover plate.

2. Remove 1 screw holding top front cover on the oven.

3. Remove 1 screw holding Inverter grounding plate on the oven.

4. Remove 3 screws holding Inverter bracket on top front cover.

5. Slide 2 locking of Inverter bracket at the top front cover slightly.

6. Disconnect 2 lead wires from fan motor A terminals.

7. Remove 1 screw holding orifice on the Inverter bracket.

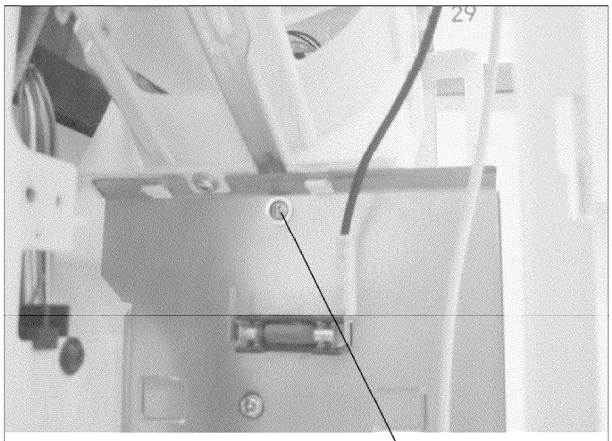
8. Release 2 tabs to make Inverter bracket flat, and then remove orifice.

9. Release 2 tabs on the Inverter bracket and make flat.

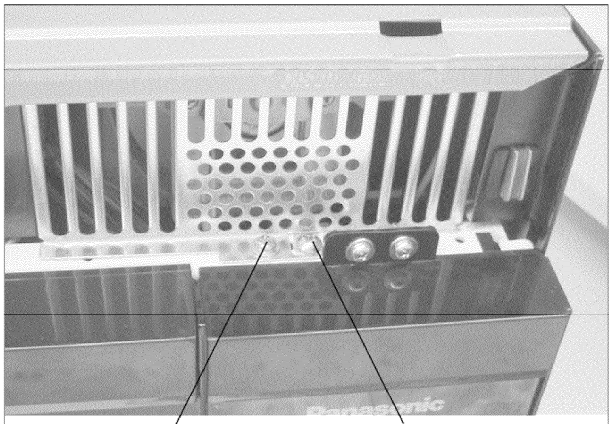
10. Unplug 3 connector on H.V. Inverter (U).

11. Remove 3 screws holding H.V. Inverter (U) onto Inverter bracket.

12. Remove 1 screw holding grounding Plate on the H.V. Inverter (U).

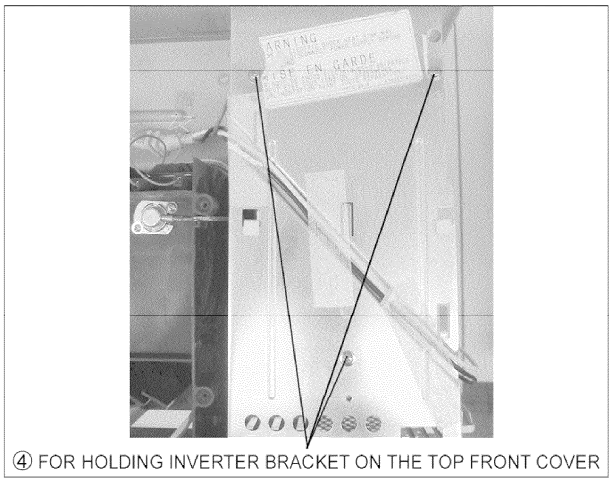


① FOR HOLDING ORIFICE ON THE COVER PLATE



② FOR HOLDING TOP FRONT COVER ON THE OVEN

③ FOR HOLDING INVERTER GROUNDING PLATE ON THE OVEN



9.5. Door assembly

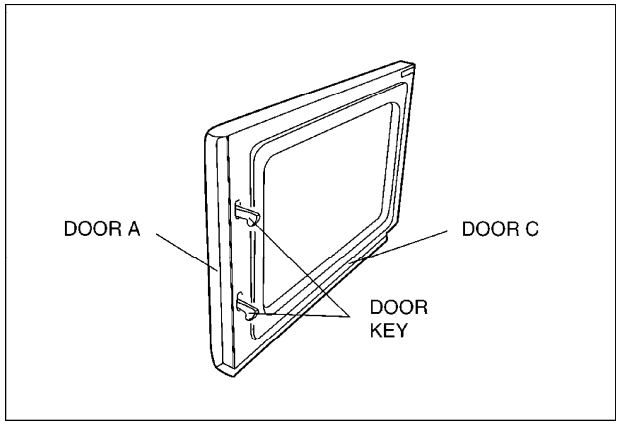
1. **Remove door C from door E by carefully pulling outward starting from upper right hand corner using a flat blade screwdriver.**
2. **Separate door E from tabs on door A and remove door A.**
3. **Remove door screen B from door A.**
4. **Remove door key and door key spring.**
5. **Open Door E at the opening angle of approximately 10°(Note: The door cannot be removed if the opening angle is greater than 10°).**
6. **Remove the door E from its hinges by pushing the door E's bottom upward and out.**
7. **Replace other components.**

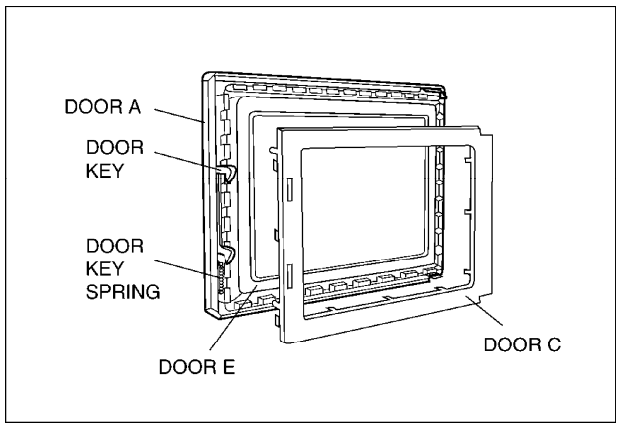
NOTE:

Door alignment is critical. If door is misaligned, apply pressure until alignment is achieved.

NOTE:

After replacement of the defective component parts of the door, reassemble, install, and perform microwave leakage test.



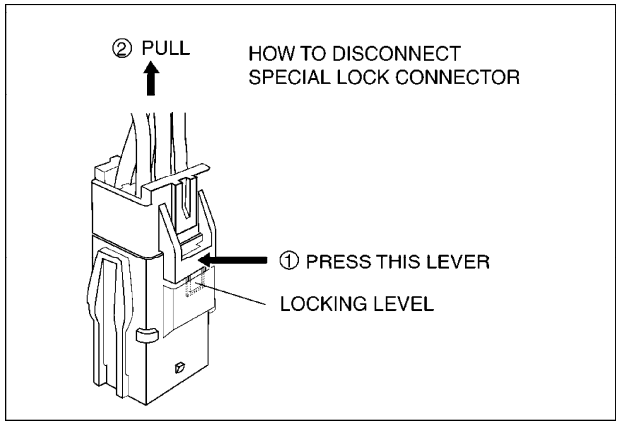


9.6. Stirrer motor

1. Release 1 canoe clip on the cover and then remove the cover.
2. Pull out stirrer.
3. Remove 3 screws which holding exhaust guide A on the oven.
4. Tilt exhaust guide A.
5. Disconnect 2 connectors from stirrer motor.
6. Remove 1 screw holding stirrer motor.
7. Release from retainer tab by turn spinning certain angle, remove stirrer motor.

9.7. Blower motor (U)

1. Disconnect 1 connector from blower motor (U).
2. Remove 2 screws which holding blower motor (U) on the oven.
3. Remove blower motor (U).

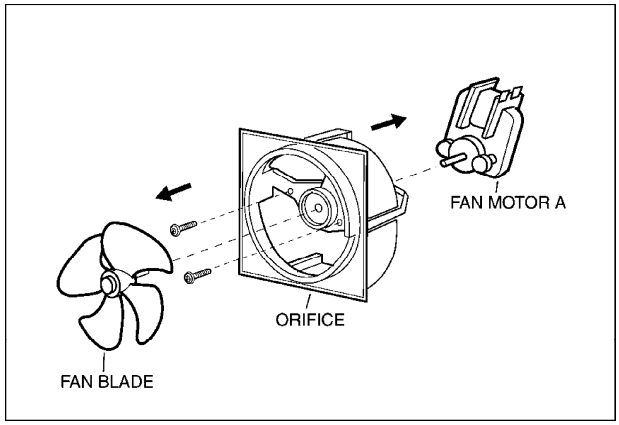


9.8. Fan motor A (for H.V. inverter (U) cooling)

Disassembly procedure step 1~8 same as above H.V. Inverter (U).

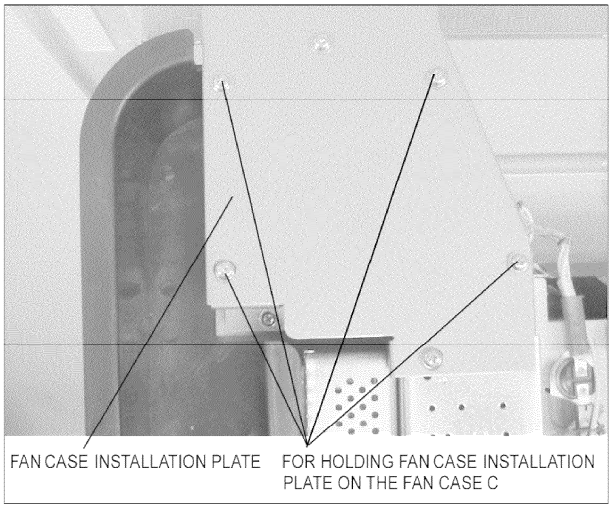
9. Pull out fan blade.

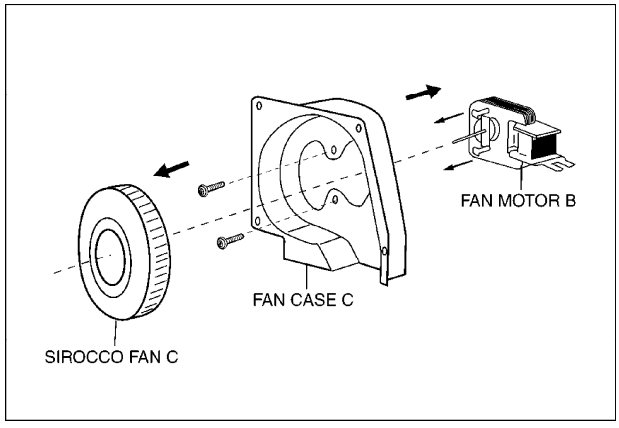
10. Remove 2 screws which holding fan motor A on the orifice, and remove fan motor A.



9.9. Fan motor B (for magnetron cooling)

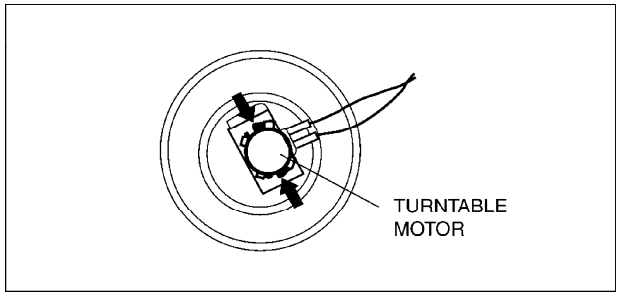
1. Disconnect 2 lead wires from fan motor B terminals.
2. Remove 4 screws holing fan motor B(U)Assembly.
3. Remove 4 screws which holding fan case installation plate on the fan case C.
4. From interior of fan case C, remove 2 screws holding fan motor B.





9.10. Turntable motor

1. Disconnect 2 lead wires from turntable motor terminals.
2. Remove 1 screw holding turntable motor.
3. Release from retainer tab by turn spinning certain angle, remove turntable.



10. COMPONENT TEST PROCEDURE

CAUTION [NEW. H.V.]

1. High voltage is present at the high voltage terminal of the High Voltage Inverter (U) including aluminum heat sink during any cook cycle.

2. It is neither necessary nor advisable to attempt measurement of the high voltage.

3. Before touching any oven components, or wiring, always unplug the oven from its power source and discharge the high voltage capacitors.

10.1. Primary latch switch, secondary (secondary latch switch and power relay B) interlocks.

1. Unplug the lead connectors to Power Relay B and verify continuity of the power relay B 1-2 terminals.
2. Unplug lead connectors to Primary Latch Switch and Secondary Latch Switch.
3. Test the continuity of switches at door opened and closed positions with ohm meter (low scale). / Normal continuity readings should be as follows.

	Door Closed	Door Opened
Primary Latch Switch	0 Ω (close)	∞ Ω (open)
Secondary Latch Switch	0 Ω (close)	∞ Ω (open)
Power Relay B	∞ Ω (open)	∞ Ω (open)

10.2. Short switch & monitor

1. Unplug lead wires from Inverter Power Supply (U) primary terminals.
2. Connect test probes of ohm meter to the disconnected leads which

were connected to Inverter Power Supply (U).

3. Test the continuity of short switch with door opened and closed positions using lowest scale of the ohm meter. / Normal continuity readings should be as follows.

Door Opened	Door Closed
0 Ω	∞ Ω

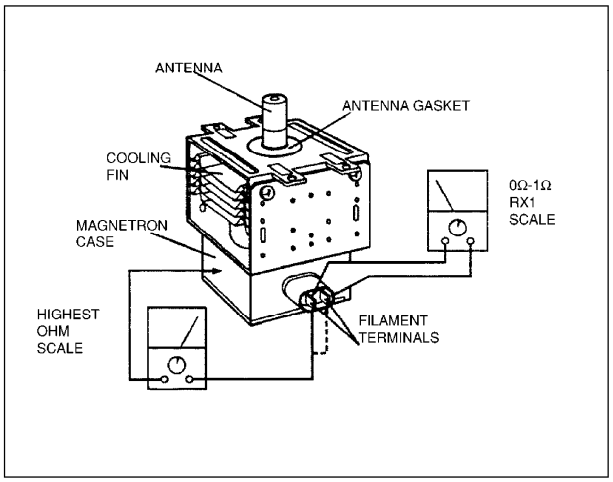
10.3. Magnetron

Continuity checks can only indicate an open filament or a shorted magnetron. To diagnose for an open filament or shorted magnetron.

1. Isolate magnetron from the circuit by disconnecting the leads.

2. A continuity check across magnetron filament terminals should indicate one ohm or less.

3. A continuity check between each filament terminal and magnetron case should read open.

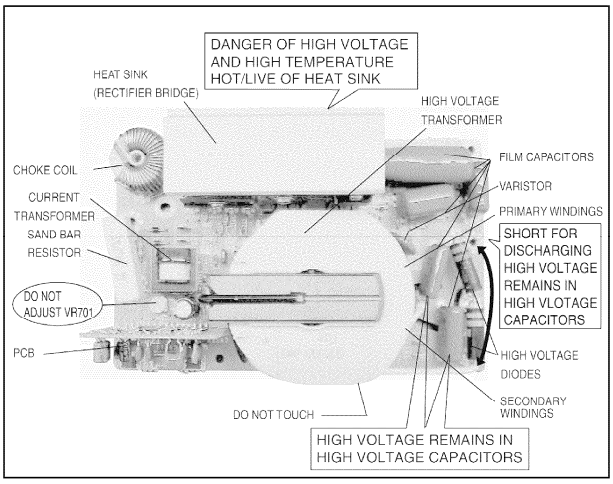


10.4. Membrane key board (Membrane switch assembly)

Check continuity between switch terminals, by tapping an appropriate pad on the key board. The contacts assignment of the respective pads on the key board is as shown in digital programmer circuit.

10.5. Inverter power supply (U)

DO NOT try to REPAIR this H.V. Inverter power supply (U).Replace as whole H.V. Inverter(U) Unit.



DANGER HIGH VOLTAGE

Test if failure codes of H97 or H98 appears by doing the following procedure. It is recommended to use an AC line input current Ampere meter for testing.

Test1

1. Program DPC.
   A. Tap Clock
   B. Tap Timer
   C. Tap Start
   D. Tap Power Level

2. Place 1 liter of water load into oven cavity.

3. Unplug 2 pin H.V. lead wire connector CN703 from magnetron tube.

4. Program oven at High power for 1 minute and press start.
   A. After approximately 23 seconds, oven stops.
   B. During oven operation, input current is approximately 0.5 to 1A. If both a and b are OK, please proceed to test 2.

	INPUT AMPERE	FAILURE CODE
Unplug CN703	0.5 to 1A	Oven stops in 23 seconds after started.

Test2

Continued from Test 1

1. Unplug 3 pin connector CN701, CN703 remains unplug.

2. Set oven at High power for 1 minute and start.
   A. After approximately 3 seconds, oven stops.

B. During oven operation, input current is approximately less than 0.4A.

	INPUT AMPERE	FAILURE CODE
Unplug CN701	<0.4A	Oven stops in 3 seconds after started.

If both a and b are OK, the Inverter Power Supply (U) can be determined OK.

11. MEASUREMENTS AND ADJUSTMENTS

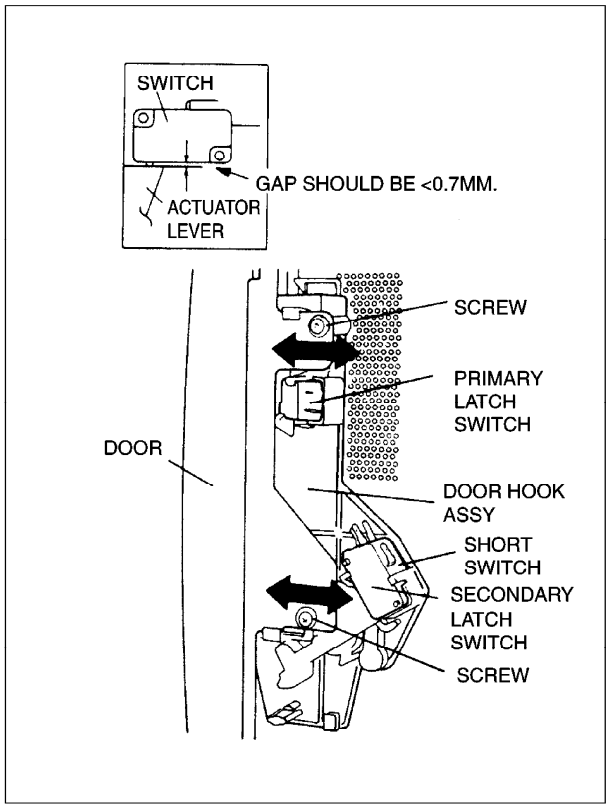
WARNING

- For continued protection against radiation hazard, replace only with identical replacement parts (For touch models Part No. A 6142 - F60, Type No. V-16G-3C26 for Primary latch switch; Part No. A61425180AP, Type No. L-3C2-2 for Secondary latch switch and Part No. A61785180AP, Type No. L-2C2-2 for short switch.)
- When the 18 Amp fuse is blown due to the operation of the short switch, you must replace power relay B. Primary latch switch and the short switch. Then follow the installation procedures below.
- Interlock switch replacement In replacing faulty switches, be sure mounting tabs are not bent, broken or otherwise deficient in their ability to hold the switches.
- Refer to schematic diagram to ensure proper connection.

11.1. Adjustment of primary latch switch, secondary latch switch and short switch.

1. **When mounting Primary latch switch,Secondary latch switch and short switch to door hook assembly, mount the Primary latch switch, the Secondary latch switch and the short switch to the door hook assembly as shown in table.**
   NOTE:
   No specific adjustment during installation of Primary latch switch, Secondary latch switch and short switch to the door hook is necessary.
2. **When mounting the door hook assembly to the oven assembly, adjust the door hook assembly by moving it in the direction of arrow in the illustration so that the oven door will not have any play in it. Check for play in the door by pulling the door assembly. Make sure that the latch keys move smoothly after adjustment is completed. Completely tighten the screws holding the door hook assembly to the oven assembly.**
3. **Reconnect the short switch and check the continuity of the monitor**

circuit and all latch switches again by following the components test procedures.



11.2. Measurement of microwave output

The output power of the magnetron can be determined by performing IEC standard test procedures. However,due to the complexity of IEC test procedures, it is recommended to test the magnetron using the simple method outlined below.

Necessary Equipment:

***1 liter beaker *Glass thermometer / *Wrist watch or stopwatch**

NOTE:

Check the line voltage under load.Low voltage will lower the magnetron output. Take the temperature readings and heating time as accurately as possible.

1. **Fill the beaker with exactly one liter of tap water.Stir the water using the thermometer and record the beaker's temperature. (recorded as T1).**
2. **Place the beaker on the center of glass cook plate. / Set the oven for High power and heat it for exactly one minute.**
3. **Stir the water again and read the temperature of the beaker. (recorded as T2).**
4. **The normal temperature rise at High power position for each model is as shown in table.**

TABLE (1L-1min.test)

RATED OUTPUT	TEMPERATURE RISE
1100W(IEC705-88)	Min. 16.9°F(9.4°C)
1200W(IEC705-88)	Min. 18.5°F(10.3°C)

12. PROCEDURE FOR MEASURING MICROWAVE ENERGY LEAKAGE

WARNING

Check for radiation leakage after every servicing. Should the leakage be more than 2 mW/cm2 (1mW/cm2 for Canada) inform PASC, PSC, or PCI immediately. After repairing or replacing any radiation safety device, keep a written record for future reference, as required by D.H.H.S. and Health and Welfare Canada regulation. This requirement must be strictly observed. In addition, the leakage reading must be recorded on the service repair ticket while in the customer's home.

NOTE:

The U.S. Government standard is 5 mW/cm2 while in the customer's home. 2mW/cm2 stated here is our own voluntary standard. (1mW/cm2 for Canada)

12.1. Equipment

- Electromagnatic radiation monitor
- Glass thermometer 212°F or 100°C
- 600cc glass beaker

12.2. Procedure for measuring radiation leakage

Note before measuring.

- Do not exceed meter full scale deflection. Leakage monitor should initially be set to the highest scale.
- To prevent false readings the test probe should be held by the grip portion of the handle only and moved along the shaded area in Figure no faster than 1 inch/sec (2.5cm/sec).
- Leakage with the outer panel removed ..... less than 5mW/cm2.
- Leakage for a fully assembled oven with door normally closed ..... less than 2mW/cm 2 (1mW/cm 2 for Canada).
- Leakage for a fully assembled oven [Before the latch switch (primary) is interrupted] while pulling the door ..... less than 2mW/cm 2.

1. **Pour 275 ± 15cc (9ozs± 1/2oz) of 20°C ± 5°C (68° ± 9°F) water in a beaker which is graduated to 600cc, and place in the center of the oven.**
2. **Set the radiation monitor to 2450MHz and use it following the manufacturer's recommended test procedure to assure correct results.**
3. **When measuring the leakage, always use the 2 inch (5cm) spacer supplied with the probe.**
4. **Tap the start pad or set the timer and with the magnetron oscillating, measure the leakage by holding the probe perpendicular to the surface being measured.**

12.2.1. Measurement with the outer panel removed.

Whenever you replace the magnetron, measure for radiation leakage before the outer panel is installed and after all necessary components are replaced or adjusted. Special care should be taken in measuring around the magnetron.

WARNING
Avoid contacting any high voltage parts.

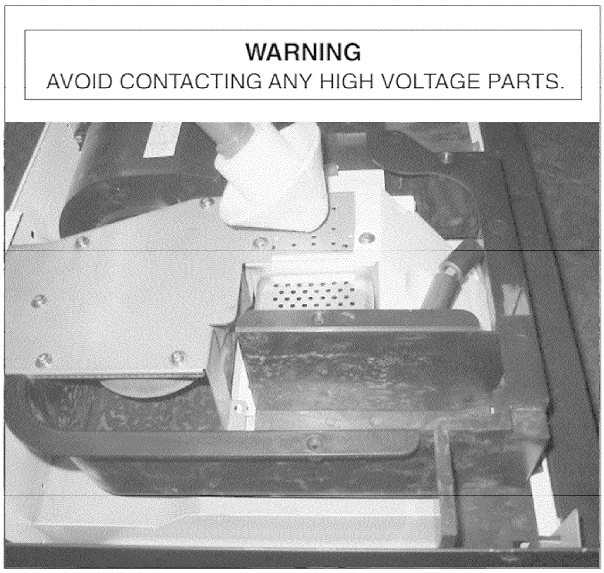
12.2.2. Measurements with a fully assembled oven.

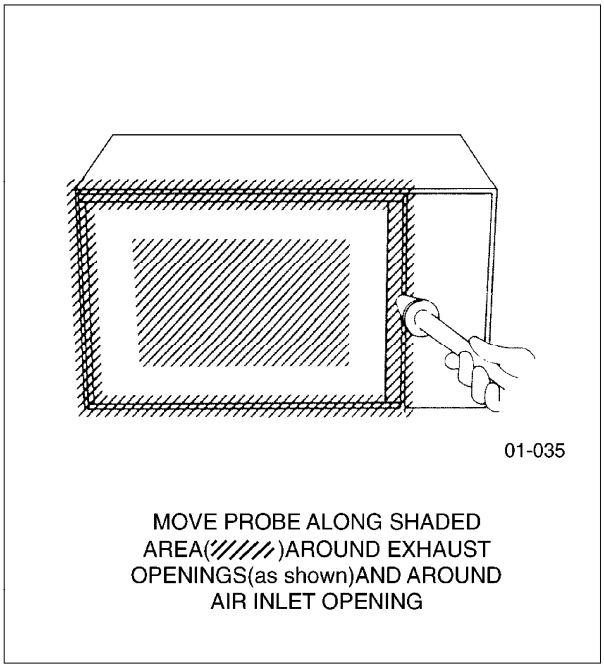
After all components, including outer panel are fully assembled, measure for radiation leakage around the door periphery, the door viewing window, the exhaust opening and air inlet openings.

12.3. Record keeping and notification after measurement

- **After any adjustment or repair to a microwave oven, a leakage reading must be taken. Record this leakage reading on the repair ticket even if it is zero.**
  A copy of this repair ticket and the microwave leakage reading should be kept by repair facility.
- **Should the radiation leakage be more than 2 mW/cm^2 (1mW/cm for Canada) after determining that all parts are in good condition, functioning properly, and genuine replacement parts as listed in this manual have been used, immediately notify PASC, PSC or PCI.**

12.4. At least once a year, have the radiation monitor checked for calibration by its manufacturer.





13. TROUBLESHOOTING GUIDE

CAUTION

1. **Check grounding before checking for trouble.**
2. **Be careful of high voltage circuit.**
3. **Discharge high voltage capacitor.**
4. **When checking the continuity of the switches or the high voltage transformer,disconnect one lead wir from these parts and then check continuity with the AC plug removed. To do otherwise may result in a false reading or damage to your meter. / When disconnecting a plastic connector from a terminal, you must hold the plastic connector instead of the lead wire and then disconnect it, otherwise lead wire m be damaged or the connector cannot be removed.**
5. **Do not touch any parts of the circuitry on the digital programmer circuit, since static electric discharg may damage this control panel. / Always touch yourself to ground while working on this panel to discharge any static charge in your body.**
6. **120V AC is present on the digital programmer circuit (Terminals of power relay's and primary circuit o low voltage transformer). When troubleshooting, be cautious of possible electrical shock hazard.**

First of all operate the microwave oven following the correct operating procedures in order to find the exact cause of any trouble.

	SYMPTOM	CAUSE	CORRECTIONS
1.	Oven is dead. Fuse is OK. No display and no operation at all.	1. Open or loose lead wire harness Open thermal cutout (Magnetron) 2. Open low voltage transformer Defective DPC 3. 4.	Check fan motor when thermal cutout is defective.
2.	No display and no operation at all. / Fuse is blown.	1. Shorted lead wire harness Defective primary latch switdh 2. (NOTE 1) 3. Defective short switch (NOTE 1) 4. Defective Inverter Power Supply (U) Refer to component test procedure	Check adjustment of primary, secondary latch switch and sh switch including door. Refer to Inverter PCB Troubleshooting.
		NOTE 1: All of these switches must be replaced at the same time. Check continuity of power relay B (RY-1)'s contacts (between 1 and and if it has continuity, replace power relay B (RY-1) also.	
3.	Oven does not accept key input(Program)	1. Key input is not insequence Open or loose connection of 2. membrane key pad to DPC (Flat cable) 3. Shorted or open membrane key board 4. Defective DPC	Refer to operation procedure. Refer to DPC troubleshooting.
4.	Fan motor turn on when oven is plugged in with door closed.	3. Misadjustment or loose wiring of secondary latch switch 4. Defective secondary latch switch	Adjust door and latch switches

	SYMPTOM	CAUSE	CORRECTIONS
5.	Timer starts count down but no microwave oscillation. (No heat while oven lamp and fan motor turn on)	1. Off-alignment of latch switches 2. Open or loose connection of high voltage circuit especially magnetron filament circuit NOTE: Large contact resistance will bring lower magnetron filament voltage and causing magnetron to lower output and/or be intermittent. 3. Defective high voltage component H.V. Inverter Power Supply (u) Magnetron 4. Open or loose wiring of power relay B (RY-1) 5. Defective primary latch switch 6. Defective DPC or power relay B (RY-1)	Adjust door and latch switches Check high voltage componen according to component test procedure and replace if it is defective. Refer to DPC troubleshooting
6.	Oven can program but timer does not start countdown.	1. Open or loose wiring of secondary latch switch 2. Off-alignment of secondary latch switch 3. Defective secondary latch switch	Adjust door and latch switches
7.	Microwave output is low. Oven takes longer time to cook food.	1. Decrease in power source voltage 2. Open or loose wiring of magnetron filament circuit.(Intermittent oscillation) 3. Aging change of magnetron	Consult electrician
8.	Fan motor turns on and turntable rotates when door is opened.	1. Shorted primary latch switch	
9.	Oven does not operate and return to plugged in mode as soon as start pad is pressed.	1. Defective DPC	Check tighten screws on escutcheon base bracket, D.P.C board.
10.	Loud buzzing noise can be heard.	1. Loose fan and fan motor	
11.	Turntable motor does not rotate.	1. Open or loose wiring of turntable motor 2. Defective turntable motor	
12.	Oven stops operation during cooking.	1. Open or loose wiring of primary and secondary latch switch 2. Operation of thermal cutout	Adjust door and latch switches
13.	Oven returns to plugged in mode after 18 seconds elapses on the Auto sensor cooking mode.	1. Open or loose wiring of sensor terminal from DPC 2. Open steam sensor 3. Defective DPC	

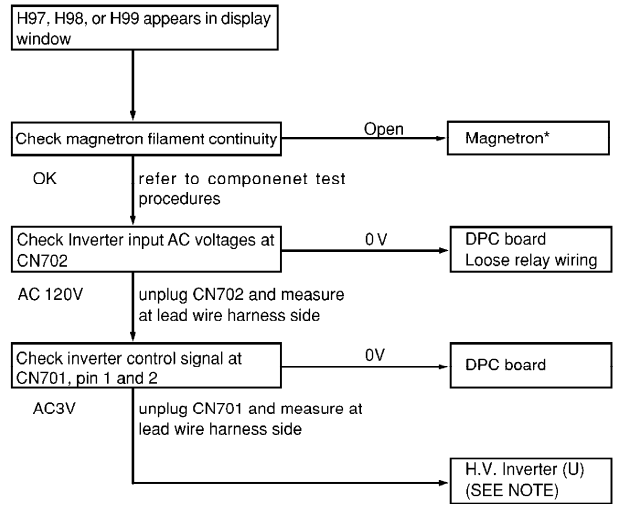
13.1. Trouble related to digital programmer circuit

SYMPTOM	STEP	CHECK	RESULT	CAUSE/CORRECTIC
No display when oven is first plugged in. Oven is dead.	1	Fuse pattern of DPC	Normal	→ STEP 2
			Open (NOTE)	Shorted Circuit of ZNR,L.V.T., Oven Lamp etc.Replace D
	2	Low voltage transformer (LVT) secondary voltage	Abnormal 0V	LVT
			Normal	→ Step 3
	3	IC-1 pin 47 voltage	Abnormal	IC-10
			Normal = 5V	IC-1, CX320, Displa
NOTE Procedure of fuse pattern repairing is as follows: 1. When the fuse pattern (PF2) opens. (1) Remove the jumper wire (PF1). (2) Insert the removed jumper wire (PF1) to "(PF2)" position and solder it. If both "PF1" and "PF2" fuse patterns are open, please replace DPC. 2. When the fuse pattern (PF4) opens. (1) Remove the jumper wire (PF3). (2) Insert the removed jumper wire (PF3) to "(PF4)" position and solder it. If both "PF3" and "PF4" fuse patterns are open, please replace DPC. NOTE:* At the time of these repairs, make visual inspection of the varistor for burning damage and examine the transformer with tester for the presence of layer short-circuit (check primary coil resistanc If any abnormal condition is detected, replace the defective parts.				
No key input	1	Membrane switch continuity	Abnormal	Membrane switch
			Normal	IC-1
No beep sound	1	IC-1 pin 8 voltage	Abnormal	IC-1
			Normal	BUZZER, Q224
Power relay A(RY-1) does not turn oneven though the program has been setand the start pad is tapped	1	IC-1 pin 41 voltage while operation	Abnormal	IC-1
			Normal = 5V	→ Step 2
	2	Short circuit between pin 8 and pin13 of IC-220	Still not turn on	RY-2
			RY-2 turns on	IC-220
No microwave oscillation at any powersetting	1	IC-1 pin 22 voltages while operation at high power	Abnormal	IC-1
			Normal 22---5V	→ Step 2
	2	Q220 transistor	Abnormal	Q220
			Normal	RY-1
Dark or unclear display	1	Replace display and check operation	Normal	DISPLAY
			Abnormal	IC-1
Missing or lighting of unnecessarysegment	1	Replace IC-1 and check operation	Normal	IC-1
			Abnormal	DISPLAY

SYMPTOM	STEP	CHECK	RESULT	CAUSE/CORRECTIC
H97/H98 appears in window and ovenstops operation. Program High powerfor 1 minute and conduct following testquickly, unless H97/H98 appears andoven stops. [NEW H.V.]	1	Unplug CN702(2 pin) connector and measure voltage between terminals	0V	1. Latch Switch 2. DPC/Power Relay
			AC line voltage of 120V	→ Step 2
	2	Unplug CN701(3 pin) connector and measure pin 1 voltage	0V	DPC
			Approx. AC 3V	Magnetron

13.2. Troubleshooting of inverter circuit (U) and magnetron [NEW H.V.]

This oven is programmed with a self diagnostics failure code system which will help for troubleshooting. H97, H98, and H99 are the provided failure codes to indicate magnetron and inverter circuit problem areas. This section explains failure codes of H97, H98, and H99. First, you must program the DPC by pressing [Clock] , [Timer] , [Start] , [Power Level] . Program unit for operation. H97, H98, H99 appears in display window a short time after start key is pressed and there is no microwave oscillation.


H97, H98, or H99 appears in display window
Check magnetron filament continuity
Open
Magnetron*
OK
refer to componenet test procedures
Check Inverter input AC voltages at CN702
0 V
DPC board
Loose relay wiring
AC 120V
unplug CN702 and measure at lead wire harness side
Check inverter control signal at CN701, pin 1 and 2
0V
DPC board
AC3V
unplug CN701 and measure at lead wire harness side
H.V. Inverter (U) (SEE NOTE)

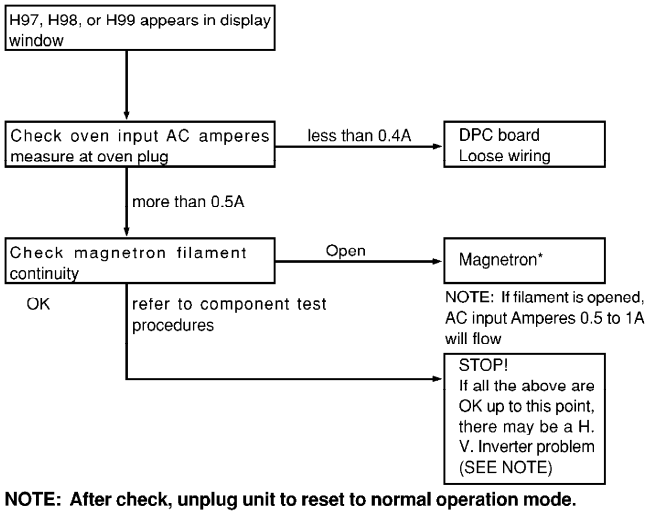
NOTE: DO NOT try to repair this Inverter Power Supply (U) and also DO NOT RE-ADJUST PRESET VOLUME on the board. It is very dangerous to repair or adjust without sufficient test equipment because this circuit handles very high voltage and very large current. Off alignment of inverter board operation is dangerous. Operating a misaligned Inverter circuit is dangerous due to the very high voltage and current that is produced by this board. Defective boards must be replaced with a new one.

* Check magnetron filament for open or short to casing before proceeding to determine a good magnetron.

NOTE: After check, unplug unit to reset to normal operation mode.

Alternate way to troubleshoot oven with AC Ampere meter used

H97, H98, H99 appears in display window a short time after start key is pressed and no microwave oscillation with AC Ampere meter used for troubleshooting


H97, H98, or H99 appears in display window
Check oven input AC amperes measure at oven plug
less than 0.4A
DPC board
Loose wiring
more than 0.5A
Check magnetron filament continuity
Open
Magnetron*
OK
refer to component test procedures
NOTE: If filament is opened, AC input Amperes 0.5 to 1A will flow
STOP!
If all the above are OK up to this point, there may be a H. V. Inverter problem (SEE NOTE)

NOTE: DO NOT try to repair this Inverter Power Supply (U) and also DO NOT

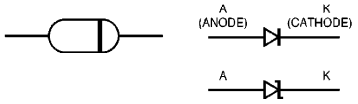
RE-ADJUST PRESET VOLUME on the board. It is very dangerous to repair or adjust without sufficient test equipment because this circuit handles very high voltage and very large current. Off alignment of inverter board operation is dangerous. Operating a misaligned Inverter circuit is dangerous due to the very high voltage and current that is produced by this board. Defective boards must be replaced with a new one.

* Check magnetron filament for open or short to casing before proceeding to determine a good magnetron.

NOTE: After check, unplug unit to reset to normal operation mode.

13.3. How to check the semiconductors using an OHM meter

Diode



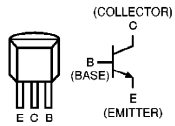
	FORWARD	REVERSE
A-K	SMALL	∞

Transistor

NPN Transistor

2SC·····

2SD·····

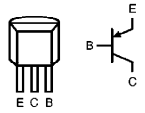


	FORWARD	REVERSE
B-E	SMALL	∞
B-C	SMALL	∞
C-E	∞	∞

PNP Transistor

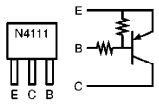
2SA·····

2SB·····



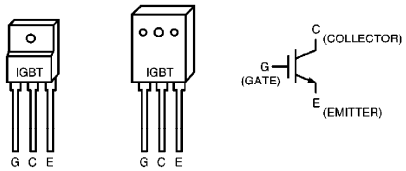
	FORWARD	REVERSE
B-E	SMALL	∞
C-B	SMALL	∞
C-E	∞	∞

Digital Transistor
PNP Transistor



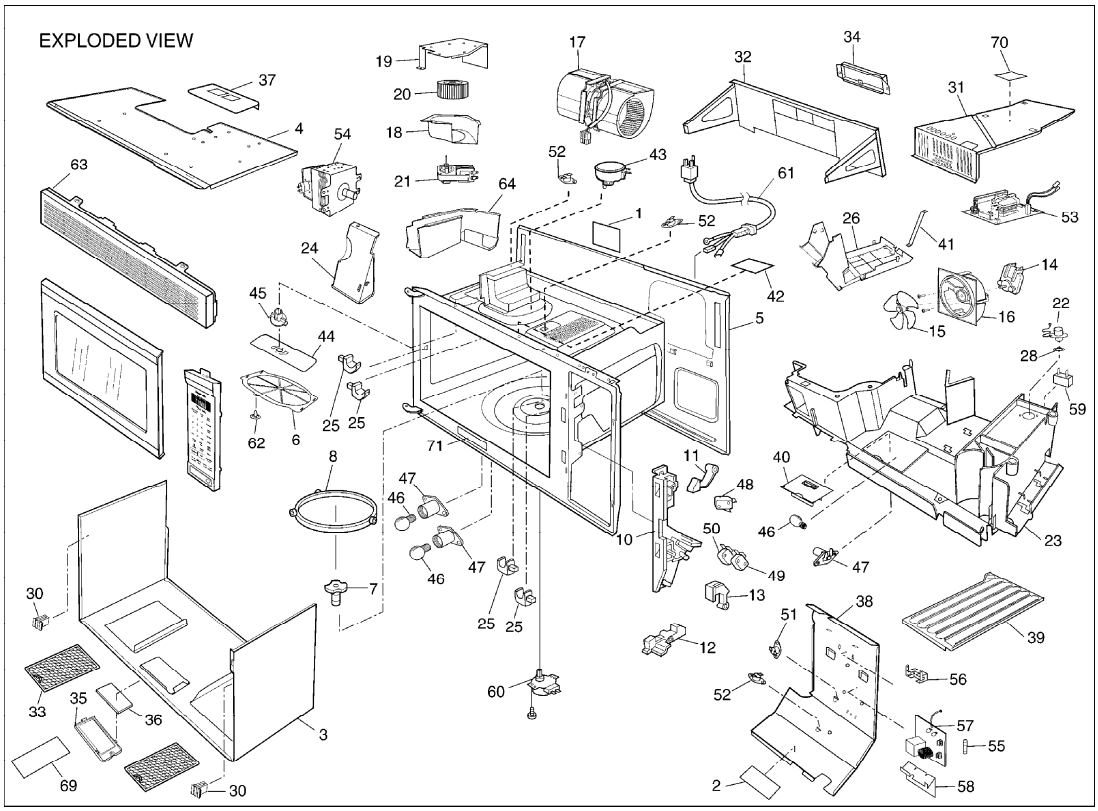
	FORWARD	REVERSE
E-B	10kΩ ~ 30kΩ	10kΩ ~ 30kΩ
C-B	50kΩ ~ 90kΩ	∞
C-E	40kΩ ~ 80kΩ	∞

IGBT
(INSULATED GATE BIPOLAR TRANSISTOR)



	FORWARD	REVERSE
E-C	SMALL	∞
E-G	∞	∞
C-G	∞	∞

14. EXPLODED VIEW AND PARTS LIST



15. PARTS LIST

NOTE:

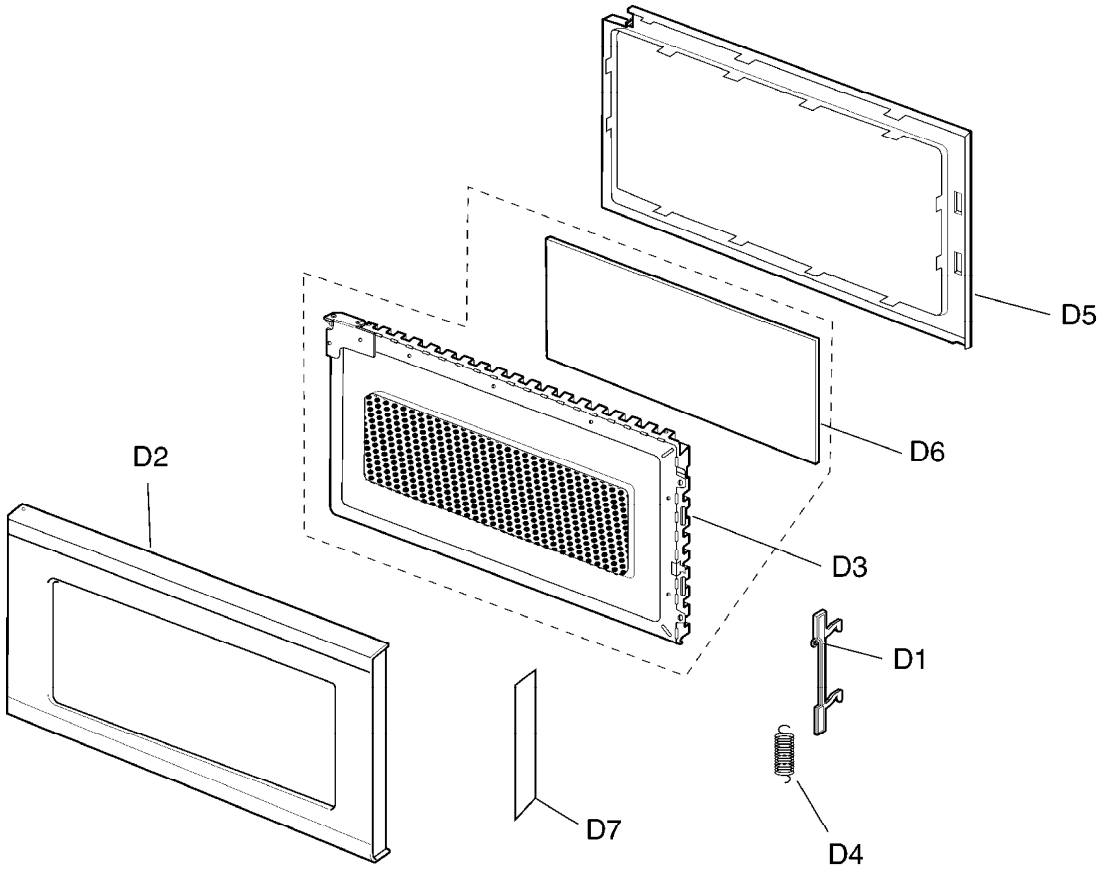
1. **When ordering replacement part(s), please use part number(s) shown in this part list.**
   Do not use description of the part.
2. **Important safety notice:**
   Components identified by ⚠ mark have special characteristics important for safety.
   When replacing any of these components, use only manufacture's specified parts.

Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
1		F00205H00AP	CAUTION LABEL	1	APH
1		F00067600CP	CAUTION LABEL	1	CPH
2		F00335H00AP	FUSE LABEL	1	
3		F110D5H00SAP	CABINET BODY (U)	1	S262SF
3		F110D5H10BAP	CABINET BODY (U)	1	S262BF, S252BF
3		F110D5H10HAP	CABINET BODY (U)	1	S262WF, S252WF
4		F100D5H00AP	BASE PLATE (U)	1	
5	⚠	F201A5H00AP	OVEN (U)	1	S262SF/BF/WF
5	⚠	F201A5H20AP	OVEN (U)	1	S252BF/WF
6		F20115H00AP	COVER	1	
7		F21314W00AP	PULLY SHAFT	1	
8		J290D-4N30BP	ROLLER RING (U)	1	
10	⚠	E3020-8000BP	DOOR HOOK	1	
11		E3136-8000BP	HOOK LEVER A	1	
12		E31374830AP	HOOK LEVER B	1	
13		E31384830AP	HOOK LEVER C	1	
14		F40015H00AP	FAN MOTOR A	1	FOR INVERTER (U) COOLING
15		F40085H00AP	FAN BLADE	1	FOR INVERTER (U) COOLING
16		F40255H00AP	ORIFICE	1	
17		F401W5H00AP	BLOWER MOTOR (U)	1	
18		F42485H00AP	FAN CASE C	1	
19		F41585H00AP	FAN CASE INSTALLATION PLATE	1	
20		F42505H00AP	SIROCCO FAN C	1	
21		F42675H00AP	FAN MOTOR B	1	FOR MAGNETRON COOLING
22		F601L5H00AP	SENSOR (BU)	1	S262SF/BF/WF
23		F40245H00AP	EXHAUST GUIDE A	1	
24		F44775H00AP	EXHAUST GUIDE	1	
25		F20025H00AP	RACK SUPPORT	4	S262SF/BF/WF
26		F65855H00AP	INVERTER BRACKET	1	
28		F62385H00AP	WASHER	1	S262SF/BF/WF
30		F201H5H00AP	MAGNET CASE (U)	2	
31		F16035H00AP	TOP FRONT COVER	1	

Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
32		F100T5H00AP	BACK PLATE B (U)	1	
33		F400B5H00AP	FILTER (U)	2	
34		F400K5H00AP	EXHAUST ADAPTER	1	
35		F63175H00SAP	GLASS PLATE HOLDER	1	S262SF
35		F63175H10BAP	GLASS PLATE HOLDER	1	S262BF, S252BF
35		F63175H10HAP	GLASS PLATE HOLDER	1	S262WF, S252WF
36		F64375H00AP	GLASS PLATE	1	
37		F41575H00AP	FAN INSTALLATION PLATE	1	
38		F42175H00AP	COVER PLATE	1	
39		F42205H00AP	COVER PLATE B	1	
40		F607V5H00AP	LAMP COVER (U)	1	
41		F61845H00AP	GROUNDING PLATE	1	
42		F60405H00AP	LAMP MEMBRANE	1	
43		F61445H00AP	STIRRER MOTOR	1	
44		F20155H00AP	STIRRER	1	
45		F20165H00AP	ANTENNA SUPPORT	1	
46		F60305H00AP	INCANDESCENT LAMP	3	
47		F61525H00AP	SOCKET	3	
48	⚠	A6142-F60	MICROSWITCH	1	(PRIMARY LATCH SWITCH) (V-15G-3C26)
49	⚠	A61425180AP	MICROSWITCH	1	(SECONDARY LATCH SWITCH) (L-3C2-2)
50	⚠	A61785180AP	MICROSWITCH	1	(SHORT SWITCH) (L-2C2-2)
51		F61455H00AP	THERMAL CUTOUT	1	
52		F61455E60XN	THERMAL CUTOUT	3	
53	⚠	A606Y4T00AP	H.V.INVERTER (U)	1	APH
53	⚠	A606Y4T00CP	H.V.INVERTER (U)	1	CPH
54	⚠	2M261-M32F	MAGNETRON	1	APH
54	⚠	2M261-M32G	MAGNETRON	1	CPH
55	⚠	B62308250AP	FUSE	1	18A/125V
56		B62314000AP	FUSE HOLDER	1	APH
57		J692Y4T00CP	NOISE FILTER (U)	1	CPH
58		F82605H00AP	NOISE FILTER BRACKET	1	CPH
59		F66985H00AP	MOTOR CAPACITOR	1	
60		F63264080AP	TURNTABLE MOTOR	1	
61	⚠	F900C5H00AP	AC CORD W/PLUG	1	APH
61	⚠	F900C5H00CP	AC CORD W/PLUG	1	CPH
62		F90804W00AP	CANOE CLIP	1	FOR COVER
63		F101V5H00AP	VENT GRILLE (U)	1	S262SF
63		F101V5H10BAP	VENT GRILLE (U)	1	S262BF, S252BF
63		F101V5H10HAP	VENT GRILLE (U)	1	S262WF, S252WF
64		F48435H00AP	INHALE GUIDE A	1	
69		F01725H00AP	CAUTION LABEL	1	
70		F00565H00AP	CAUTION LABEL	1	
71		F03345H10AP	MENU LABEL	1	S262SF/BF/WF APH
71		F03345H20AP	MENU LABEL	1	S252BF/WF APH
71		F03345H10CP	MENU LABEL	1	S262SF/BF/WF CPH

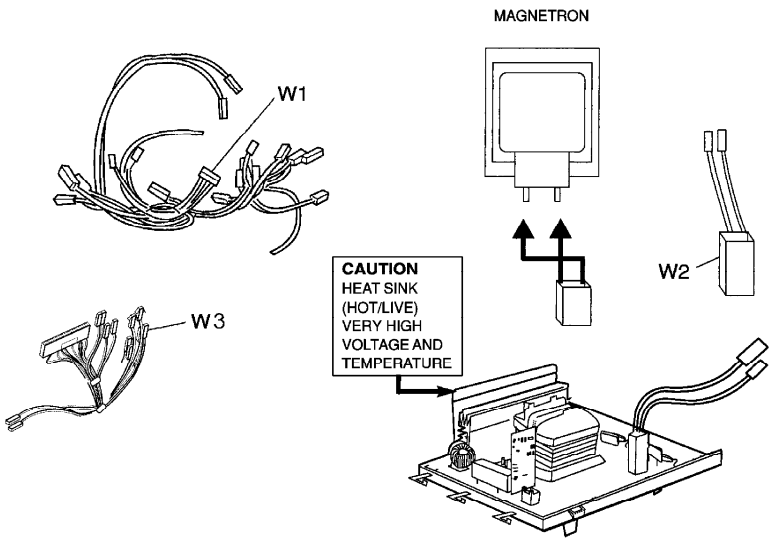
Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
71		F03345H20CP	MENU LABEL	1	S252BF/WF CPH

16. DOOR ASSEMBLY



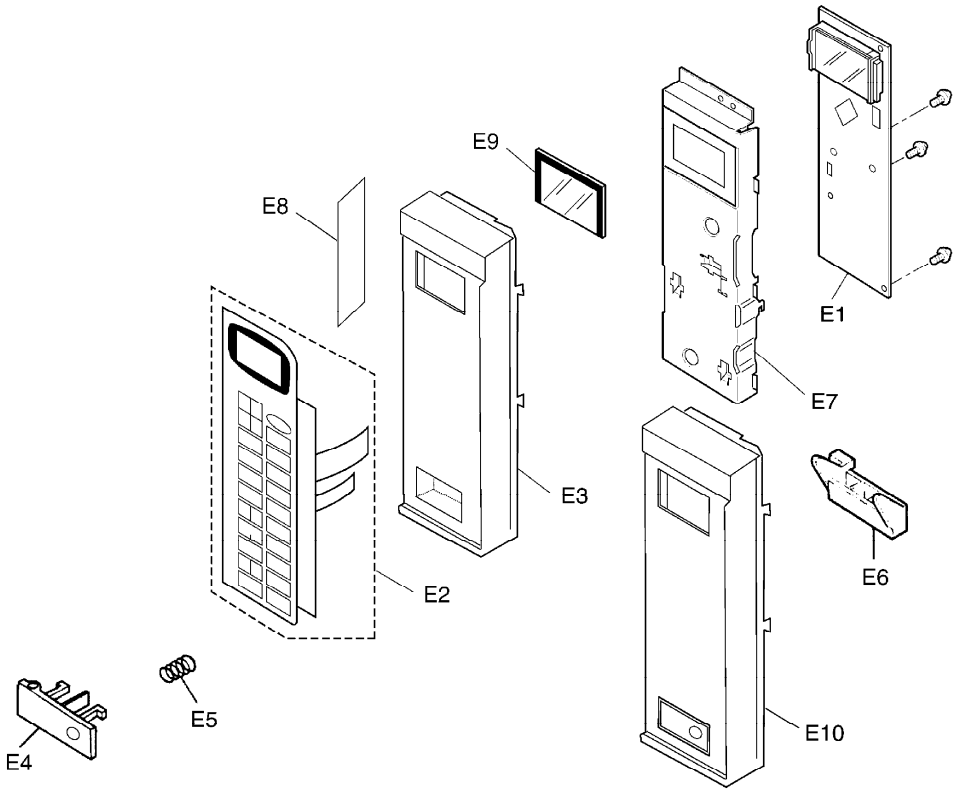
Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
D1		F3018-1200	DOOR KEY A	1	
D2	⚠	F302A5H00AP	DOOR A (U)	1	S262SF
D2	⚠	F302A5H00BAP	DOOR A (U)	1	S262BF, S252BF
D2	⚠	F302A5H00HAP	DOOR A (U)	1	S262WF, S252WF
D3	⚠	F302K5H00AP	DOOR E (U)	1	
D4		F30214000AP	DOOR KEY SPRING	1	
D5	⚠	F30855H00AP	DOOR C	1	
D6	⚠	F31455H00AP	DOOR SCREEN A	1	
D7		F02459660AP	DHHS LABEL	1	APH
D7		F04114180CP	DHHS LABEL	1	CPH

17. WIRING MATERIALS



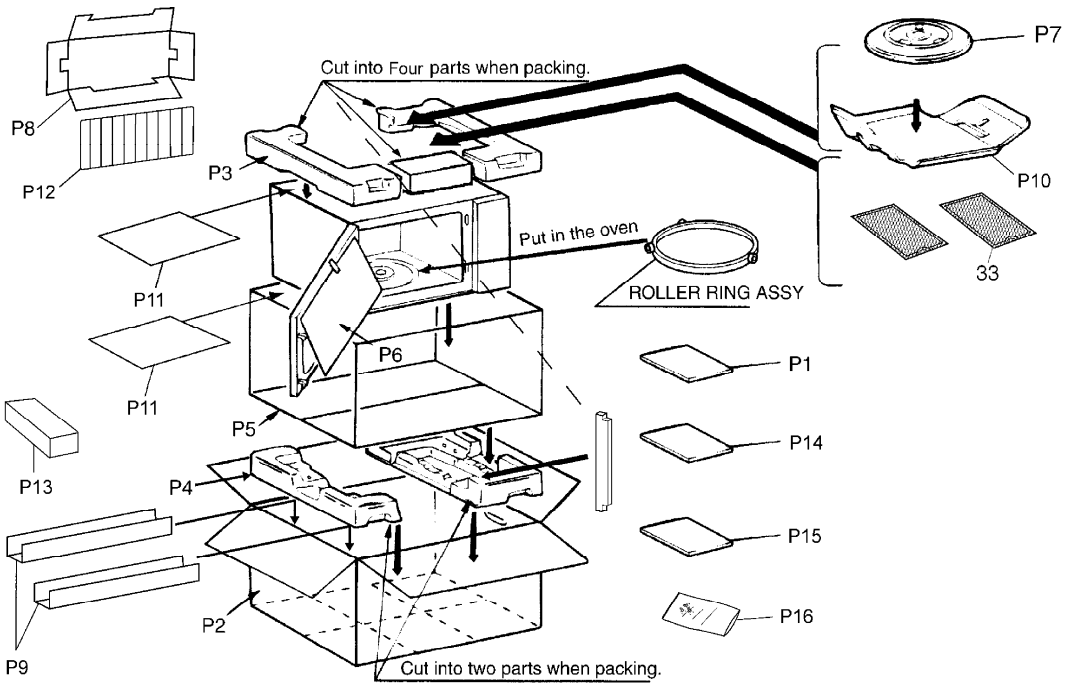
Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
W1		F030A5H00AP	LEAD WIRE HARNESS	1	APH
W1		F030A5H00CP	LEAD WIRE HARNESS	1	CPH
W2		F030E5H00AP	H.V.LEAD WIRE	1	APH
W2		F030E5H00CP	H.V.LEAD WIRE	1	CPH
W3		F03535H00AP	LEAD WIRE HARNESS U	1	

18. ESCUTCHEON BASE ASSEMBLY



Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
E1		F603L5H00AP	D.P.CIRCUIT	1	S262SF APH, S262BF/WF APH
E1		F603L5H20AP	D.P.CIRCUIT	1	S252BF/WF APH
E1		F603L5H00CP	D.P.CIRCUIT	1	S262SF CPH, S262BF/WF CPH
E1		F603L5H20CP	D.P.CIRCUIT	1	S252BF/WF CPH
E2		F630Y5H10BAP	MEMBRANE SWITCH (U)	1	S262SF/BF APH
E2		F630Y5H10HAP	MEMBRANE SWITCH (U)	1	S262WF APH
E2		F630Y5H20BAP	MEMBRANE SWITCH (U)	1	S252BF APH
E2		F630Y5H20HAP	MEMBRANE SWITCH (U)	1	S252WF APH
E2		F630Y5H10BCP	MEMBRANE SWITCH (U)	1	S262SF/BF CPH
E2		F630Y5H10HCP	MEMBRANE SWITCH (U)	1	S262WF CPH
E2		F630Y5H20BCP	MEMBRANE SWITCH (U)	1	S252BF CPH
E2		F630Y5H20HCP	MEMBRANE SWITCH (U)	1	S252WF CPH
E3		F80345H10BAP	ESCUTCHEON BASE	1	S262BF, S252BF
E3		F80345H10HAP	ESCUTCHEON BASE	1	S262WF, S252WF
E4		F80725H10BAP	DOOR OPENING BUTTON	1	S262BF, S252BF
E4		F80725H10HAP	DOOR OPENING BUTTON	1	S262WF, S252WF
E5		F80375950AP	OPENING BUTTON SPRING	1	
E6		F82565H00AP	DOOR OPENING LEVEL	1	
E7		F81275H00AP	BACK PLATE	1	
E8		F00075H00AP	NAME PLATE	1	S262SF APH
E8		F00075H10BAP	NAME PLATE	1	S262BF APH
E8		F00075H10HAP	NAME PLATE	1	S262WF APH
E8		F00075H20BAP	NAME PLATE	1	S252BF APH
E8		F00075H20HAP	NAME PLATE	1	S252WF APH
E8		F00075H00CP	NAME PLATE	1	S262SF CPH
E8		F00075H10BCP	NAME PLATE	1	S262BF CPH
E8		F00075H10HCP	NAME PLATE	1	S262WF CPH
E8		F00075H20BCP	NAME PLATE	1	S252BF CPH
E8		F00075H20HCP	NAME PLATE	1	S252WF CPH
E9		F80025H00AP	ESCUTCHEON B	1	
E10		F800L5H00AP	ESCUTCHEON BASE (U)	1	S262SF

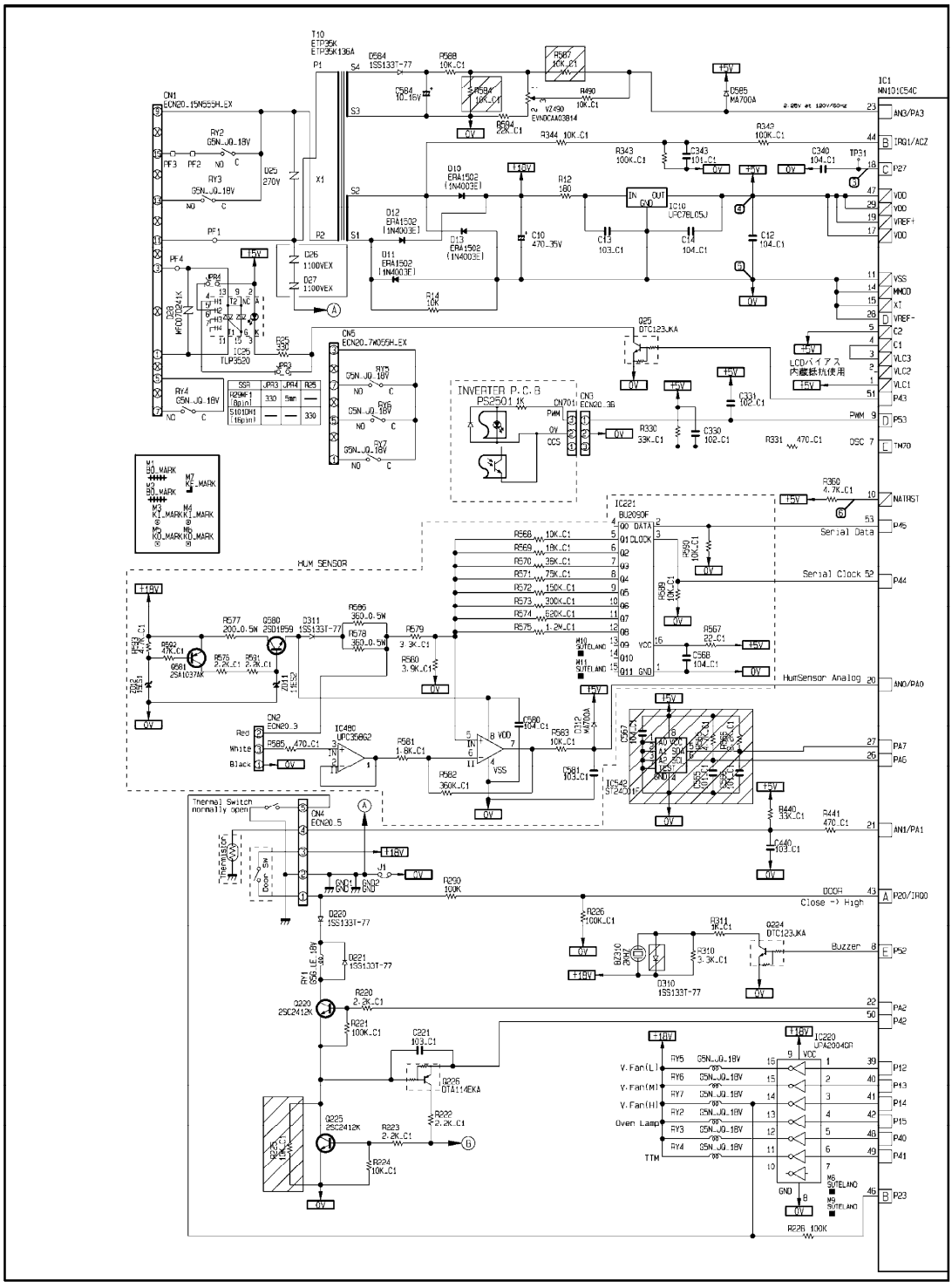
19. PACKING AND ACCESORIES

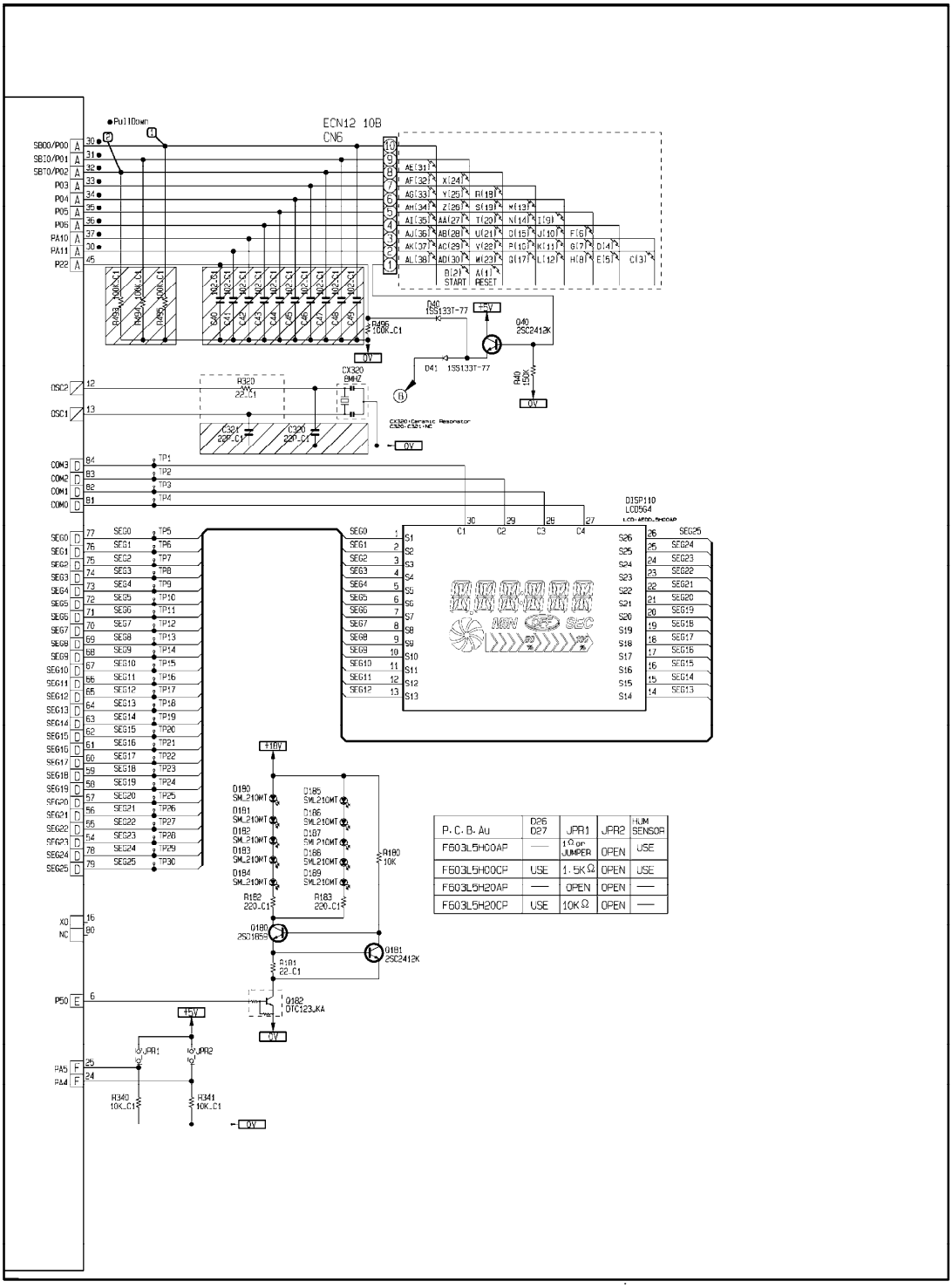


Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
P1		F00035H00AP	INSTRUCTION MANUAL	1	APH
P1		F00035H00CP	INSTRUCTION MANUAL	1	CPH
P2		F01025H00AP	PACKING CASE PAPER	1	S262SF APH
P2		F01025H10BAP	PACKING CASE PAPER	1	S262BF APH
P2		F01025H10HAP	PACKING CASE PAPER	1	S262WF APH
P2		F01025H20BAP	PACKING CASE PAPER	1	S252BF APH
P2		F01025H20HAP	PACKING CASE PAPER	1	S252WF APH
P2		F01025H00CP	PACKING CASE PAPER	1	S262SF CPH
P2		F01025H10BCP	PACKING CASE PAPER	1	S262BF CPH
P2		F01025H10HCP	PACKING CASE PAPER	1	S262WF CPH
P2		F01025H20BCP	PACKING CASE PAPER	1	S252BF CPH
P2		F01025H20HCP	PACKING CASE PAPER	1	S252WF CPH
P3		F01045H00AP	UPPER FILLER	1	
P4		F01055H00AP	LOWER FILLER	1	
P5		F01065H00AP	P.E.BAG	1	
P6		F01075H00AP	DOOR SHEET	1	
P7		A06015H00AP	COOKING TRAY	1	
P8		F01175H00AP	TRAY PACKING B	1	S262SF/BF/WF
P9		F01485H00AP	REINFORCE BRACKET	2	
P10		F01085H00AP	TRAY PACKING	1	
P11		F01925H00AP	SHEET	2	
P12		F06025H00AP	OVEN RACK	1	S262SF/BF/WF
P13		F02185H00AP	PROTECTOR PACKING	1	
P14		F03135H00AP	INSTALLATION INSTRUCTION	1	
P15		F04315H00AP	UPPER-CABINET TEMPLATE	1	APH
P15		F04315H00CP	UPPER-CABINET TEMPLATE	1	CPH
P16		F011F5H00AP	ATTACHMENT	1	
33		F400B5H00AP	FILTER (U)	2	

20. DIGITAL PROGRAMMER CIRCUIT

SCHEMATIC DIAGRAM





21. DIGITAL PROGRAMMER CIRCUIT

PARTS LIST

Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
BZ310		AEFBTFM571	BUZZER	1	2.0KHz
C221, C440, C13		AECUU06F103Z	CHIP CAPACITOR	3	0.01 μ F/50V
C582		AECUU06F103Z	CHIP CAPACITOR	1	0.01 μ F/50V (S262SF/BF/WF)
C343		AECUU06C101J	CHIP CAPACITOR	1	100PF/50V
C12, C14, C340		AECUT06F104Z	CHIP CAPACITOR	3	0.1 μ F/25V
C568, C580, C583		AECUT06F104Z	CHIP CAPACITOR	3	0.1 μ F/25V (S262SF/BF/WF)
C330, C331		AECUU06R102K	CHIP CAPACITOR	2	1000PF/50V
C10		AECETK1V102B	AL CHEM CAPACITOR	1	100 μ F/35V (S262SF/BF/WF)
C10		AECETK1V471B	AL CHEM CAPACITOR	1	470 μ F/35V (S252BF/WF)
C584		AECETS1C100B	AL CHEM CAPACITOR	1	10 μ F/16V
C25		ECQE2A104MWA	CAPACITOR	1	0.1 μ F/250V (APH)
CN1		AEEMXH55515W	CONNECTOR	1	15 Pin
CN2		AEEMXH00703W	CONNECTOR	1	3 Pin (S262SF/BF/WF)
CN3		AEEMXH00703B	CONNECTOR	1	3 Pin
CN4		AEEMXH01H05W	CONNECTOR	1	5 Pin
CN5		AEEMXH05507W	CONNECTOR	1	7 Pin
CN6		AEEM10FDZBTM	CONNECTOR	1	10 Pin
		F66175E40XN	LCD HOLDER	1	
		F67525E40XN	DIFFUSION SHEET	1	
DISP110		AEDDHJ5H00AP	LCD	1	
CX320		AEFOS800MG06	CERAMIC RESONATOR	1	8.0MHz
D10, D11, D12, D13		AEDNERA1502	DIODE	4	
D40, D41, D220, D221, D584		AESS133T-77	DIODE	5	
D585		AEDNRB721Q	DIODE	1	
D312		AEDNRB721Q	DIODE	1	(S262SF/BF/WF)
D25		AERZ271KD10A	VARISTOR	1	
D26, D27		AERZ102KD10A	VARISTOR	2	(CPH)
D28		AERZ241KD07A	ZENER DIODE	1	
D180, D181, D182, D183, D184, D185, D186, D187, D188, D189		AESQSML210MT	CHIP-LED	10	
IC1		MN101C54CDW	L.S.I	1	
IC220		AEICU2004GR	IC	1	
IC480		AEICUPC358G2	IC	1	(S262SF/BF/WF)
IC25		AEICR29MF1	IC	1	
IC10		AEIC78L05J-T	IC	1	
IC221		AEICBU2090F	IC	1	(S262SF/BF/WF)
IC500		AEIC78M15AFH	IC	1	(S262SF/BF/WF)
Q226		AESA14EKE	CHIP DIDI-TRANSISTOR	1	
Q25, Q182, Q224		AESC23JKE	CHIP DIDI-TRANSISTOR	3	
Q180		2SD1859TV2Q	TRANSISTOR	1	
Q581		2SA1037AK	TRANSISTOR	1	(S262SF/BF/WF)
Q40, Q181, Q220, Q225		2SC2412KT146	CHIP TRANSISTOR	4	
R311		AERJ06J102R	CHIP RESISTOR	1	1K Ω , 1/16W, 5%
R224, R340, R341, R344, R490, R588		AERJ06J103R	CHIP RESISTOR	6	10K, 1/16W, 5%
R568, R583, R589, R590		AERJ06J103R	CHIP RESISTOR	4	10K, 1/16W, 5% (S262SF/BF/WF)
R221, R226, R342, R343, R496		AERJ06J104R	CHIP RESISTOR	5	100K, 1/16W, 5%
R575		AERJ06J125R	CHIP RESISTOR	1	1.2M, 1/16W, 5% (S262SF/BF/WF)
R572		AERJ06J154R	CHIP RESISTOR	1	150K, 1/16W, 5% (S262SF/BF/WF)
R581		AERJ06J182R	CHIP RESISTOR	1	1.8K, 1/16W, 5% (S262SF/BF/WF)
R569		AERJ06J183R	CHIP RESISTOR	1	18K, 1/16W, 5% (S262SF/BF/WF)
R181, R320		AERJ06J220R	CHIP RESISTOR	2	22 Ω , 1/16W, 5%
R567		AERJ06J220R	CHIP RESISTOR	1	22 Ω , 1/16W, 5% (S262SF/BF/WF)

Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
R182, R183		AERJ06J221R	CHIP RESISTOR	2	220 Ω, 1/16W, 5%
R220, R222, R223		AERJ06J222R	CHIP RESISTOR	3	2.2K, 1/16W, 5%
R594		AERJ06J223R	CHIP RESISTOR	1	22K, 1/16W, 5%
R573		AERJ06J304R	CHIP RESISTOR	1	300K, 1/16W, 5% (S262SF/BF/WF)
R310		AERJ06J332R	CHIP RESISTOR	1	3.3K, 1/16W, 5%
R579		AERJ06J332R	CHIP RESISTOR	1	3.3K, 1/16W, 5% (S262SF/BF/WF)
R330, R440		AERJ06J333R	CHIP RESISTOR	2	33K, 1/16W, 5%
R570		AERJ06J363R	CHIP RESISTOR	1	36K, 1/16W, 5% (S262SF/BF/WF)
R582		AERJ06J364R	CHIP RESISTOR	1	360K, 1/16W, 5% (S262SF/BF/WF)
R580		AERJ06J392R	CHIP RESISTOR	1	3.9K, 1/16W, 5% (S262SF/BF/WF)
R331, R441		AERJ06J471R	CHIP RESISTOR	2	470 Ω, 1/16W, 5%
R585		AERJ06J471R	CHIP RESISTOR	1	470 Ω, 1/16W, 5% (S262SF/BF/WF)
R360		AERJ06J472R	CHIP RESISTOR	1	4.7K, 1/16W, 5%
R593		AERJ06J472R	CHIP RESISTOR	1	4.7K, 1/16W, 5% (S262SF/BF/WF)
R592		AERJ06J473R	CHIP RESISTOR	1	47K, 1/16W, 5%
R574		AERJ06J624R	CHIP RESISTOR	1	620K, 1/16W, 5% (S262SF/BF/WF)
R571		AERJ06J753R	CHIP RESISTOR	1	75K, 1/16W, 5% (S262SF/BF/WF)
R14, R180		AERDY2TJ103T	CARBON FILM RESISTOR	2	10K, 1/4W, 5%
R228, R290		AERDY2TJ104T	CARBON FILM RESISTOR	2	100K, 1/4W, 5%
R40		AERDY2TJ154T	CARBON FILM RESISTOR	1	150K, 1/4W, 5%
R12		AERDY2TJ331T	CARBON FILM RESISTOR	1	330 Ω, 1/4W, 5%
R576, R577, R578, R586		AEROY2F3300T	RESISTOR	4	330 Ω, 1/4W, 5%
VZ490		AEVTZ6TLT103	VARIABLE RESISTOR	1	10K Ω VR
RY1		AEGG5G1A18	POWER RELAY	1	
RY2, RY3, RY4, RY5, RY6, RY7		AEBJQ1A18	POWER RELAY	6	
T10		AETP35K136A	LOW VOLTAGE TRANSFORMER	1	
ZD12		AESZMTZJ150B	ZENER DIODE	1	(S262SF/BF/WF)

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